# Putting Meat on the Table

Contributed by Peter Goodchild
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Editor's note: It goes without saying that Culture Change readers are interested in sustainability and non-cruelty, and stand for peace and nonviolence. However, Peter Goodchild's new piece is a tour de force, touching on fish-hook making, constructing traps, preparing hides, etc., from his first-hand experience, and is a quintessential do-it-yourself (DIY) resource. - JL

Yes, I know, the only meat you're allowed to eat is the kind that sits in a Styrofoam tray and is covered with cling film. Buddhists aren't allowed to kill fish, so they leave them to die on the beach. Now let's get down to business.

## Hunting

A gun or two would be very useful, at least until the world's ammunition runs out. Owning a gun, however, does not mean you can actually hit anything with it, so be sure to do plenty of target practice well before your life depends on being able to shoot accurately.

In a survival situation you would generally not go hunting in the usual manner, carrying a specific type of gun and looking for a specific type of prey, in accordance with the time of year and particularly in accordance with the type of license you're carrying. On the contrary, if you were truly living off the land you would need to be prepared for any sort of wild meat, whether it was frogs or moose.

There's no such thing as a perfect gun, so you have to make your own decisions. Of course, as they say, "First you choose the ammunition. Then you choose the gun to go with it." A .22 rifle is quiet, with very lightweight ammunition; if necessary, even large animals can be killed with such a gun if you fire repeatedly and hit the vital areas. A 12-gauge shotgun is certainly powerful and will take a variety of ammunition, but it's only good for short distances. You could use a shotgun for deer, especially in thick forest where the animal would be sighted at only a short distance, or you might prefer a rifle, perhaps a lever-action .30/30 (light and easy to carry), a .270, a .303, or a 30-06. Bolt and lever actions are less trouble-prone than either pump or semi-automatic, and in a world without easy access to gunsmiths they might therefore be preferable. It's really hard to say, though, what constitutes the one best survival gun. Based on what native people do, and what military survival experts seem to prefer, it would seem that a single-shot .22 is the best choice. On the other hand, in most of North America it is illegal to shoot big game with something as small as .22 ammunition, so as long as governments endure the .22 is a somewhat theoretical survival weapon.

Buy your gun or guns as soon as possible, and buy as much ammunition as your budget will allow, before it becomes too expensive or too restricted. Unfortunately the laws regarding the possession of guns and ammunition can change in irrational and unpredictable ways over the years. Throughout history, economic collapse has tended to be correlated with repressive legislation, and at the best of times most governments seem uncomfortable with allowing ordinary citizens to hold weapons.

Virtually all North American mammals are suitable as food. Porcupines can be easily clubbed, and hence form a good source of food in emergencies. Deer and moose are common big-game animals, while sheep, elk, and antelope are taken in other areas. In parts of the southwestern United States, smaller animals, including mice and pack rats, once provided a large part of the diet. Rabbits can be killed with simple throwing-sticks, sometimes after they have been driven into long nets by community drives — long lines of people walking towards the rabbits, driving them towards the nets.

A possible problem with hunting for game, in post-collapse times, is that there might be far too many people doing it.

That’s especially likely when many people start to ignore the game laws, and every day is “open season.” On the other hand, there are three good reasons, all somewhat interrelated, why there might not be such a problem of excessive hunting. The first is that the shortage of fuel will cut down the number of motorized vehicles — cars, trucks, ATVs, snowmobiles, motorboats — on which the modern hunter depends. The second and related reason is that the average member of modern industrial civilization lacks the physical stamina to go wading through a swamp all day, looking for a moose. A third reason is that there are simply not that many people who have the skills for serious hunting.

Don’t laugh at bows and arrows; some of the best hunters use them instead of firearms. Arrows are silent, so you have a better chance at a second shot, and for the same reason you have less worry about human intruders. Unlike rifle cartridges, arrows can be re-used immediately, and the materials to make new ones can easily be found. Don’t underestimate the killing power of a sharp broadhead.

## Trapping

Books often show dozens of types of traps, but in reality you would use only a few. You would probably want to set a fair number of traps if you expected to get something to eat, but it’s unlikely that you would use many types. Most traps fit into two general categories: deadfalls and snares. A deadfall is a log or rock held by a support attached to some sort of trigger mechanism; when the trigger is moved, the support falls, and the log or rock lands on the animal. Usually some sort of bait food is attached to the trigger in order to attract the animal. Snares, on the other hand, sometimes have triggers and bait, but not always, since the trapper often just sets the snare in the animal’s regular path, hoping that the snare will be invisible to the animal.

In many cases, snares are more useful than deadfalls, partly for the above-mentioned reason that they usually do not require finding bait. For rabbits or hares, the snare would have either a flexible spring-pole or a nonflexible toss-pole; the latter sits in a fork that acts as a fulcrum. The noose itself is held in place either with a loop of the cord or by a tiny toggle-stick that serves the same triggering function. For larger animals the trap is much simpler, just a length of strong braided rawhide set in place in such a way that the animal sticks its head through the noose.

As long as metallic wire is still available, you might as well use it. Snares that use wire are less complicated than those that use natural materials, since no mechanism is needed for lifting the animal from the ground to prevent it from chewing the material. In northern regions it is snowshoe hares that are most commonly snared in this manner. They can only be snared in the winter, when they make distinct trails. You need copper or brass wire (or steel wire, which may be easier to find) between about 20 and 24 gauge. Some people use braided number-2 picture-hanging wire, but single-strand wire is fine. The snare wire should be 50 cm long. Make a loop 10 cm wide, and fasten it to a well-fixed horizontal pole so that the bottom of the snare is 5 to 8 cm above the trail.

Although snares were generally used more often than deadfalls, in the desert areas of the southwestern US the opposite was the case, partly because of the available materials. The basic principal of that type of deadfall is to place two large flat rocks so that they form a hinge, which is held open by a vertical stick or a set of sticks. The simplest form of rock deadfall, and in fact the one most commonly used for the smaller mammals, has the vertical stick held in place by nothing more than a kernel of dried corn underneath it.

Most of the above descriptions of snares and deadfalls are rather brief or abstract, but it is important to have an overview of the concepts, although in actual practice it is the details that count. The books listed below in the bibliography give more-precise descriptions and pictures.

## Fish

Another important source of animal food, of course, is fish. They are an excellent source of protein, even though most of the freshwater varieties don't provide enough fat for a steady diet.

There are several good books on modern sport-fishing available, and there would be little point in trying to include all that information here. For the most part, these methods involve a rod and a reel. From a survivalist perspective, perhaps all that should be added is that while the modern types of fishing gear include "spincast," "spinning," "baitcast," and "fly," the first is really more suitable for a beginner than for a more serious person, while the fourth is perhaps questionable as a survival tool since it is intended mainly for use with artificial bait. In general, natural baits are more effective than artificial ones, although it takes time to find such things. I should also point out that along with the above types of gear, there is also the much simpler device of a 3-m pole with a line of the same length attached to one end, and with a hook, a float, and a weight at the other end of the line — with not much practice, such a rig might catch as many fish as more sophisticated gear. In a true survival situation, of course, you might also not hesitate to use a torch or other fire to attract fish at night, and you wouldn't worry too much about sizes or catch limits.

You can certainly use a hook and line to catch fish, as just mentioned, but this can sometimes be a slow way of getting a meal. Other methods include the use of traps, spears, harpoons, or bows and arrows. Sometimes fish can be caught in slow-moving water by adding substances to the water that will poison or stun the fish without making it poisonous for humans: the natives of North America used buckeye nuts, amole, turkey mullein, Indian hemp, pokeweed, Indian turnip, walnut bark, and devil's shoestring. The most effective methods of fishing involve the use nets of various sorts.

Primitive hooks can be made of wood, bone, antler, or shell. Some are made of one piece of material, some are made of two. One-piece bone hooks are made by first taking a large flat piece of bone and scratching the curved design of the hook on it. By deepening these scratches, the hook can finally be lifted away from the rest of the bone. The hook is sanded to shape, and a groove is cut around the top of the shank to hold the line.

The two-piece kind of hook has several variations, but basically it involves tying a pointed bit of bone or hard wood — a thorn would also work — to a wooden shaft. The top of the shaft is carved to form a knob to hold the line, or a groove is cut around the shaft. Tie the string to the shaft, and weave it back and forth around the shaft and the point in a series of figure-8s about a dozen times. If you make the hook entirely out of wood, you'll have to tie a small piece of stone or bone to the top of the shaft, to get it to sink.

Another simple device used for catching fish is the gorge. Sharpen a sliver of bone at both ends, and carve a groove around the middle, or drill a hole through it, to hold the string. When the fish swallows the gorge, it turns sideways and catches.

The hook or gorge is fastened to a cord, which in turn is fastened to the end of a pole. Hooks and gorges can be baited with meat, dead fish, or insects. An artificial lure can be used instead; it is usually dangled from the end of a separate line.

A very common kind of fish trap is the weir, basically a fence or wall built across a river. Often the weir is V-shaped, with the point of the V usually downstream, so that the force of the current carries the fish down into the center. The point is kept open wide enough for the fish to swim through into some sort of corral. The Inuit made the trap (straight, not V-shaped) out of boulders placed across a shallow river, while further south the trap was usually made of poles planted in the riverbed.

An improvement on this setup is to place a basket trap at the point of the V. Basket traps can be made in all sizes, from about 1 m to over 6 m in length. To make one, take several dozen long thin poles and fasten hoops inside or outside them. Fasten a shorter cone inside the mouth of the first one. Tie the trap to the point of the V, with a few heavy rocks inside to hold it down on the bottom of the river.

Perhaps the most effective of all devices for fishing are nets, but they represent quite an advanced stage of “primitive” technology, especially if we consider that before the net can be made someone must produce great lengths of cordage. Again, only the basic idea can be presented here. Nets can take many forms, from long-handled dip nets to much larger seine nets that are drawn around whole schools of fish, but perhaps the most common is the gill net, so called because its mesh is large enough for a fish to put its head through, but small enough that the fish will get caught by the gills.

A fishnet is really just several rows of girth hitches (or you can use sheet bends). You’ll need a good deal of cord, and you’ll also need a gauge for measuring the squares of the net, and a shuttle to hold the cord as you weave. The gauge is simply a rectangular piece of wood about 10 cm wide. The shuttle is a flat piece of wood about 15 cm long and about 5 wide, with a deep notch at each end; the cord is wound onto the shuttle and then unwrapped as you go along. In an emergency, you can get by without either a gauge or a shuttle, just using your left hand as a gauge and keeping the cord wound up in a ball instead of on a shuttle, but it isn’t as easy to keep things tidy that way. You’ll also need a length of heavier cord, which you’ll later run all around the net.

Plant two poles firmly in the ground, or fasten them to two trees, about as far apart as the length that you want your net to be, perhaps 6 m. Tie the cord to top of the right-hand pole, maybe 1 or 2 m off the ground. Let out enough cord to reach to the left-hand pole, bring the cord back around the pole, and then make a knot loosely around the top length of cord about every 10 cm. Insert the gauge into the big loop that you’re tying off; pull the knot tightly up against the gauge. Let out a little more cord as you move to the right and make another knot in the top cord. And so on. When you’ve worked your way all the way back to the right-hand pole, take another turn around the pole and do another row of loops and girth hitches underneath the first row, going in the opposite direction.

Keep going back and forth, with each row under the previous one, until you reach the ground. Keep everything tight, so that the net retains an even shape. The knots slide, so you can always adjust them a bit afterwards, but you can’t really adjust the overall size of each square, so it’s important to keep the cord pulled up tight against the gauge each time, before you tighten the knot.

When you’ve finished the bottommost row, run the heavier cord through each of the topmost loops, then down through all of the loops on one side, along and through the bottom loops, and then up the second side, where the two ends of this heavier cord can be tied together. This cord will protect the net from strains that might otherwise damage it. Remove the poles, and the net is complete. When you want to put it in the water, though, you’ll need to tie pieces of wood or bark along the top edge, and small rocks along the bottom edge, so that the top of the net floats and the bottom of the net sinks.

There are various ways of setting a gill net. If a creek is narrow enough, it might be possible to fasten the net right across from one bank to another. If not, then one end is tied to a tree or stake on the shore, and the far end is pulled out into the water by someone swimming or in a canoe, and fastened to a long pole planted in the river bed, or the end can be kept in place by a big float at the top and a big anchor-stone under the water. One good place to put a gill net is in a bend in a river, on the outside curve, preferably where the river widens slightly and has little whirlpools; fish often rest and feed in these spots.

Miscellaneous Wild-Animal Food

Almost any creature in the animal kingdom can provide food, but there are a few exceptions in North America. Some Pacific mussels, oysters, and clams are often dangerous in the summertime because of a poisonous organism that gets into them. You can eat most types of insects, but there are a few kinds to be avoided, mostly butterflies, moths, and adult beetles; the usual rule is that if it tastes bitter, it probably isn’t digestible.

Insects are high in protein and certainly worth considering as food. The most practical insect dish is grasshoppers, which are a common item of food in many parts of the world. Catching grasshoppers can be a community affair; people can dig a pit near the grasshoppers, 1 or 2 m deep, and then make a big circle around the pit and the insects. They can then walk inwards towards the pit, hitting the ground with branches, forcing the grasshoppers to jump into the pit, from which they can be scooped up to be boiled or roasted. Roasted grasshoppers can later be crushed into a powder to be used in soup. Grasshoppers aren't bad tasting; they're a bit like unsalted peanuts.

Other sources of animal food are the many kinds of shellfish. Not only can the bivalves, such as mussels, oysters, and clams, be eaten (except sometimes, as noted, on the Pacific coast during the summer), but also the univalves: periwinkles, whelks, and other kinds of snails. There are several kinds of clams. They are generally found below the surface of mud or sand, somewhere between the high-tide and the low-tide areas, and each kind of clam has its own preferred place to live. Some kinds prefer to burrow near the high-tide zone, other prefer the low-tide zone. Some kinds live in mud, others prefer sand. The easiest way to spot clams is to watch for their squirts as you walk near them. When you see them spurting water in this way, dig a hole beside some of these spurts, and then start digging sideways towards the clams to get at them.

Reptiles and amphibians can be clubbed or speared for food. Snake is certainly a worthwhile emergency food; there isn't a great deal on an average snake fillet, but it tastes fine. Turtles can be caught with just a piece of meat fastened to one end of a line, with the other end of the line tied to a pole stuck in the riverbank. Frogs are an excellent source of food. Bullfrogs can easily be speared from a canoe (split a stick partway, to make a two-pronged spear); peel the skin off the legs and cook them.

Grouse and other birds can be caught in snares, which might be set up in a circle around some grain thrown down as bait. Ducks and geese are most easily shot or corralled during the summer molting season, when they are less able to fly. A bola can be used to bring down birds from a passing flock. The bola is simply three rocks encased in leather pouches, which in turn are attached to cords joined together at the end. The cords are whirled around the head and let loose at the right moment.

Domesticated Animals

If you're determined to raise animals for food, you may find that chickens are the least troublesome, but do so in a simpler manner than that described by most of the modern books, which are based on maximized (commercialized) production. A chicken lays about one egg a day, so you wouldn't need many birds. Feed them grains and greenery. Chickens get calcium and phosphorus from the soil they eat; if your land is lacking these elements, you would have to use supplements such as mollusk shells or crushed limestone — but it might be impossible to obtain these. A coop, even if just a primitive one, must be built as a defense against predators. Another problem with chickens is that they're always pecking each other, unless they're completely free-running — but then they'll try to get into your garden and eat your vegetables. If you can't raise chickens in the above conditions, then ultimately you would need to find or create a breed of chicken that looked and acted like its early ancestors: strong but small even if not so productive in terms of meat or eggs.

If you're adventurous you could try raising goats, sheep, or pigs, whereas cows might take up too much room. Without touching on all the complexities of animal husbandry, it might be worth pointing out that most of the modern textbooks on the subject are largely filled with descriptions of the various diseases of animals and the methods of treatment. If we look at the way domesticated animals are raised in pre-industrial societies, on the other hand, the most obvious difference is that treatment of disease is largely ignored. Any Medieval European chronicle, for example, has references to the effect that in the year such-and-such the herds were wiped out by one nameless disease or another. These things used to be regarded as the unavoidable caprices of Nature, and even if human hunger was the consequence the only solution was to wait for the disease to run its course.

## Preserving Animal Food

Mammals should be bled and gutted soon after killing. The blood can be used to make soup, and the liver, kidneys, and most other organs should be eaten right away, since they can't be preserved easily. About the only organ that isn't edible is the gall bladder (although deer don't have one), next to the liver.

You can preserve fish by splitting them in half and hanging them up to dry in the sun, or a smoky fire can be built underneath. The flesh of larger fish can be slashed a few times to speed up the drying. Very small fish sometimes don't really need to be split or gutted, but just strung up and smoked.

The flesh of mammals is treated in very much the same way as that of fish. In fairly warm and dry areas, the meat of deer or other mammals can be just cut into strips and hung over poles to dry in the sun, but in other areas a small fire should be kept lit under the meat; the fire shouldn't heat the meat or even smoke it very much, just dry it out. The meat should be dried for several days, until it is somewhat leathery in texture, then packed away until it is needed, at which time it can be softened by boiling.

## Preparing Hides

When you kill an animal, don't waste the hide. The following is how the native people of North America prepared animal hides, although there were hundreds of variations on this method. The first task is to skin the animal (perhaps even before gutting): cut from the anus to the throat, along the inside of each leg, and around the head and feet. The sooner you do the skinning after killing the animal, the more easily the hide will come off, although the legs are always somewhat more difficult than other areas. Stretch the hide by pulling it repeatedly with your hands for an hour or so. If you want a more flexible product, mash and briefly simmer the animal's brain with a little water, and rub the mixture into the hide as you're stretching it. To prevent later attacks by vermin, suspend the hide above a smoky fire for an hour or so. The hides of rabbits and hares, however, need no treatment other than air-drying once they're removed from the animal.

The hides of deer and similar animals were usually treated somewhat differently: the hair tends to shed easily, so it was usually removed as the hide was being prepared. Begin by soaking the hide in lukewarm water for a few days until you can easily pull out handfuls of hair. Then throw the hide, with the hair side up, over the end of a big log that's been raised about 1 m above the ground at one end, and scrape off all the hair. Turn the hide over and scrape off all the remaining meat and fat. Continue with the usual process of stretching and twisting the hide to soften it, or use the animal's brain as described above. You could also roll the hide up, tie it all in a big overhand knot, and then insert two short poles that can be twisted in opposite directions, tied together, and left for several hours. The last stage of preparation again might be to smoke the hide to protect it from vermin.

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Read his previous work, Laborers Before Sunrise, here.