

A WEED WORKERS GUIDE TO SHARPENING

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The single biggest mistake I have seen among field workers is using tools that are too dull, with the result that hand tools are perceived as less effective than they are. In addition, because a dull tool requires more force to cut, it increases the chance it will cause an accident. Most tools we use, even shovels, will work much more efficiently when properly sharpened. With cutting tools like loppers, pruners, machetes and Pulaskis, the difference between sharp and dull is the difference between finishing a task with a reasonable amount of time and energy, or turning an easy job into an ordeal.

Many tools are not sharp when new. Manufacturers omit good sharpening, because most buyers don't know the difference! Most of the tools used in cutting vegetation and earth can be easily sharpened, with little skill required. In our work, you don't want tools razor sharp, because an edge that thin will break if used for this work.

You can do a quick initial sharpening of just the tip, but successive sharpening will produce an ever wider, and therefore less sharp edge. To create a sharp edge, you must reduce the thickness of the blade just behind the cutting edge. This is called a relief bevel. This bevel should be about 1/4" to 3/8" wide, and at an angle of about 15 degrees to the blade. Lay the tool on its side, and, file the relief bevel into the edge along its entire length, using a double cut mill file. This requires removing a lot of metal, but it only needs doing once. If you have many tools to sharpen, this step can be done on a vertical belt sander. But unless you have experience, you can easily ruin the edge by overheating, which de-tempers the steel. It's much safer to use a file!

The last step is to put the edge bevel on the tip. This bevel is only about 1/16" wide, and is made at a steeper angle. Use a single cut mill file for this, to produce a finer edge. This is the bevel which does the cutting, and the one you will touch up in the field to keep the tool sharp. If you omit this step, the cutting edge will be too thin, and will quickly break.



The angle of this bevel depends on its use. For cutting herbaceous vegetation with machetes and other thin bladed tools, you'll need a bevel angle of about 20 to 25 degrees. Wood cutting tools like axes need a beefier angle of 30 to 35 degrees. Tools for working in dirt will need an even thicker angled edge to protect them from chipping. Soil is decomposed stone, and is very abrasive, even if you don't hit rocks. If you know you're going to be working in rocky soil, keep some dull tools around for this use, so you don't ruin your sharpened edges.

A double cut file removes stock fast, but leaves a rougher edge, making it suitable for tools like Pulaski's, shovels, mattocks, etc. Single cut files cut slower and produce a finer edge, and are used on thinner edges like machetes or bank blades. I use a file that is single cut on one side, and double cut on the other side. Do the major stock removal with the double cut side, and the final edge work with the single cut side. When re-sharpening, it's best to leave small dings or chips in place, rather than trying to file away enough material to remove them completely. They will be gradually removed with repeated sharpening anyway.

Once your tools are properly sharpened, they can be kept sharp in the field with a brief honing. For machetes and other thin blades, I use a folding diamond hone with two edges, with coarse grit on one side, and fine grit on the other side.. A few quick strokes with the coarse edge on each side of the blade, followed by a few strokes on the fine side is all you need to keep that edge sharp. It takes much less time to keep an edge sharp than it does to bring it back when really dull, so remember to hone every few minutes, and your tool will stay sharp with a minimum of effort. However, repeated honing in the field will eventually result in a thicker edge, which will not cut well. Then it's time to restore the original bevel angles in the shop.

Although bypass (scissors style) pruners and loppers can be sharpened, I don't recommend using them. They become quickly ruined the first time a user twists them in the cut, and in my experience this usually happens the first time out. This separates the cutting edges slightly, and the tool is ruined. The real problem with this is that the tool still looks fine. So people keep wasting time and energy using it, wondering why they don't enjoy their work! Anvil style loppers and pruners withstand even serious twisting, and are much more effective at cutting dead wood as well. *Never* use any pruners or loppers to cut wire.