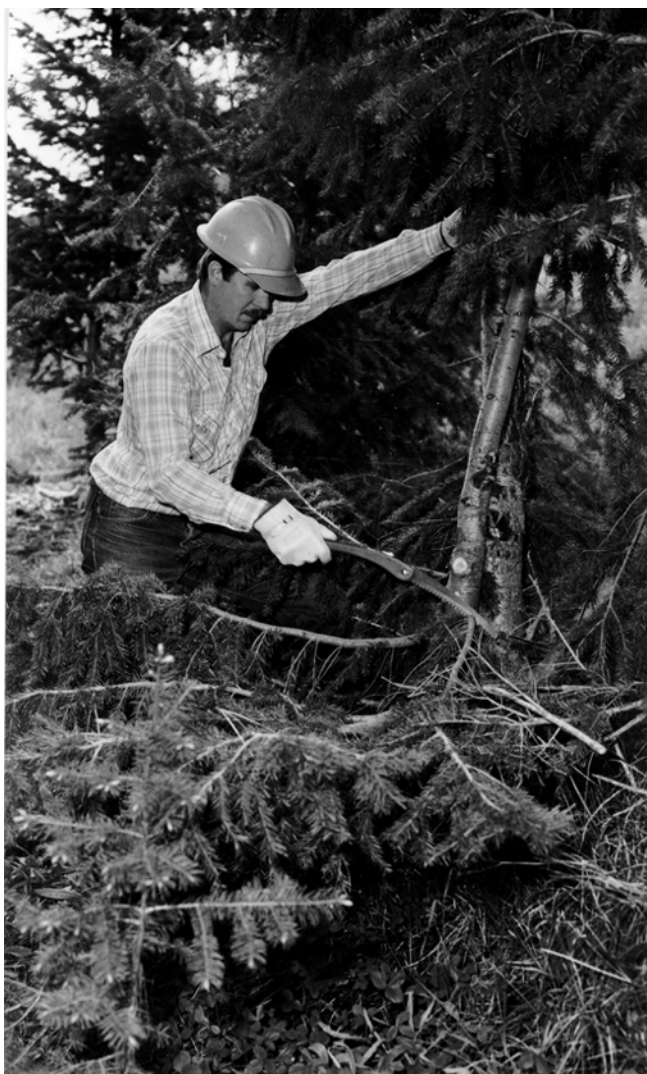


Pruning Saws

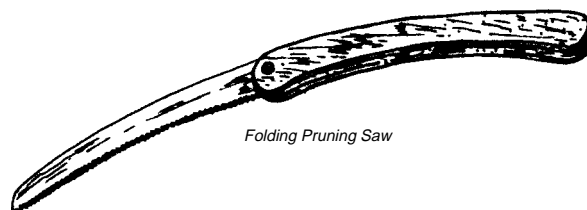
Pruning saws are useful for limbing, some brushing, and removing small downfall, especially where space is limited and cutting is difficult. The triangular handle design limits cutting depth, however. Blades vary from 10 to 36 inches, and saws weigh from $\frac{3}{4}$ to $2\frac{1}{2}$ pounds.



Pruning saws used in trail clearing quickly limb small branches.

Folding pruning saws are also handy. Some triangular saws collapse for carrying; other folding saws have a curved blade with teeth on the underside attached to a short handle by a bolt and wing nut. The bolt and nut lock the blade open for use and closed for carrying, like a pocket knife. These blades may be sharpened with a 6-

inch cant saw file. Blades are also easy and inexpensive to replace. Check the bolt often for tightness. Carry replacement parts.



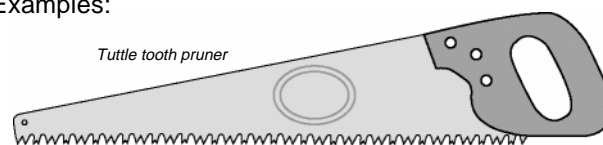
Folding Pruning Saw

Smokejumpers use folding saws to retrieve parachutes and other equipment from trees or bushes.

Pruning saws should be used, maintained, and carried like bow saws.

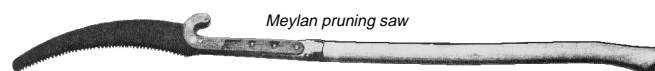
Pruning saws used in trail clearing quickly limb small branches.

Examples:



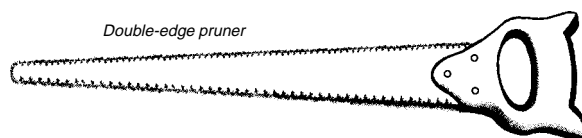
Tuttle tooth pruner

The Tuttle tooth pruner is a handy all-purpose saw for general pruning requirements. The teeth are designed for fast cutting of large limbs and firewood. The 21-inch blade is $4\frac{7}{8}$ inches wide at the butt, and $1\frac{1}{8}$ inches wide at the point. Weight is $1\frac{1}{4}$ pounds.



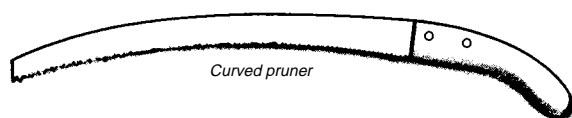
Meylan pruning saw

The Meylan pruning saw combines a curved ax handle and a curved saw blade that enables a sawyer of average height standing on the ground to prune nearly 10 feet high. The handle is 36 inches long and the blade is 16 inches long. Weight is $2\frac{1}{2}$ pounds.

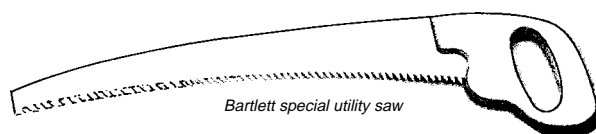


Double-edge pruner

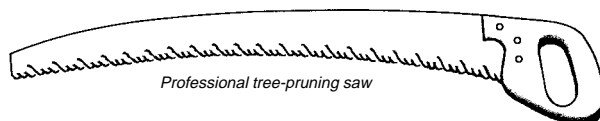
The double-edge pruner has fine teeth on one edge for light trimming, and lightning teeth on the other edge for heavier jobs. The blade is $2\frac{1}{2}$ inches wide at the handle, and $\frac{29}{32}$ inch at the point. The fine edge has eight points per inch, and the other edge is $\frac{11}{32}$ -inch pitch lightning teeth. Weight is about 1 pound.



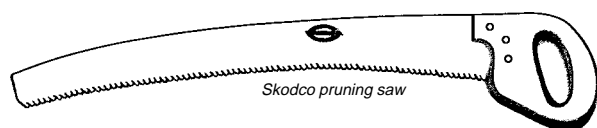
The curved pruner is an excellent general-purpose pruner for fast cutting of small limbs. It has an easy-to-grip, knife-type wood handle, and is trimmed with nicked screws. The 14-inch blade has seven reverse-rip points per inch and is $1\frac{1}{2}$ inches wide at the handle, and $\frac{9}{16}$ inch wide at the point. Weight is $\frac{1}{2}$ pound.



The Bartlett special utility saw has a 24-inch diamond-tooth pattern blade (four points per inch). Weight is $1\frac{1}{2}$ pounds.



The professional tree-pruning saw (heavy-duty) has extra-large teeth and gullets for speed cutting of large limbs. The concave cutting edge is precision set and beveled-filed, and cuts fast on the pull stroke. The blade is flat-ground, 26 inches long, $3\frac{5}{16}$ inches wide at the butt, and $1\frac{13}{32}$ inches at the point. Weight is $1\frac{1}{2}$ pounds.



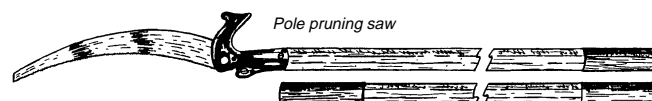
The Skodco pruning saw has a 24-inch blade with special baked-on blued finish and straight-toothed edge for cutting on the pull stroke. The extra large hand hole enables easy use while wearing gloves. The blade is $3\frac{3}{16}$ inches wide at the butt, $1\frac{3}{8}$ inches at the point, and has $4\frac{1}{2}$ points per inch. Weight is $1\frac{3}{4}$ pounds.



The folding pruner has a 10-inch curved blade with a sure-grip wood handle that folds to protect the cutting edge. The blade has $6\frac{1}{2}$ cross-cut points per inch, and is $1\frac{15}{16}$ inches wide at the butt, and $\frac{1}{2}$ inch at the point. Weight is $\frac{3}{4}$ pound.

Pole Saws (Pole Pruners)

This saw has a curved blade attached to a long extension handle and is used to prune high protruding limbs. The teeth face backward on the underside of the blade, so the cut is made on the pull stroke. The curved blade helps prevent binding and transfers the weight of the tool to the branch to aid cutting. Handles typically extend from 4 to 16 feet.



When using a pole saw, be aware of other workers nearby. Cut only those limbs whose ends you can see. Clear an area for dropping limbs. When cutting larger limbs, make two cuts. Begin with a slight cut on the underside of the branch to prevent bark from tearing when the limb is severed from the top.

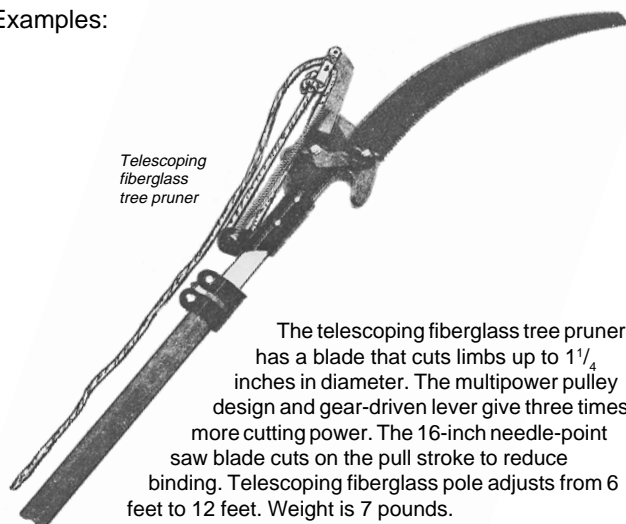
Carry pole saws by your side. Grip the handle near the blade and point it away from your body and down. Long handles may require another worker to carry the tool farther back on the handle. Don't let the end of the handle drag on the ground.

Sharpen these saws with a slim taper file. Pole saws have alternately offset teeth that are beveled on both edges. Clamp the blade so the gullets are exposed about $\frac{1}{8}$ -inch to minimize chatter during sharpening. Align the file in the first gullet against the front and trailing edges of two adjacent teeth. The file should form an angle of about 65° with the blade. File every other gullet, then reverse direction and file alternate gullets at the same angle. Four or five strokes per tooth should suffice. File teeth equally; unevenly filed teeth will differ in height. The shorter teeth will be ineffective while cutting.

When transporting blades, provide a small protective box that holds approximately 10 to 15 blades vertically. Each blade should be separated by a $\frac{1}{4}$ -inch plywood partition.

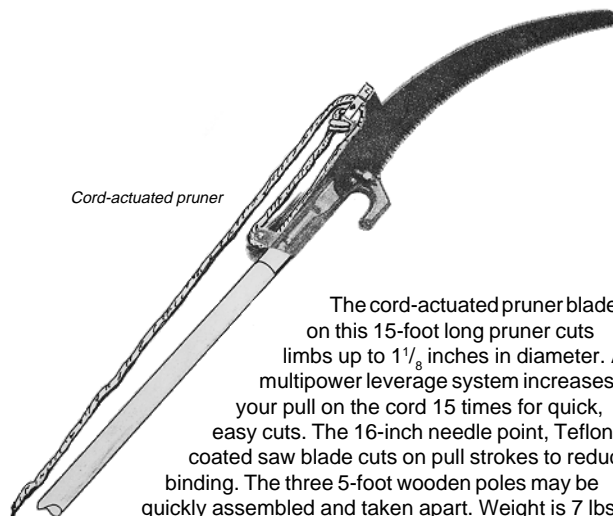
Examples:

Telescoping fiberglass tree pruner



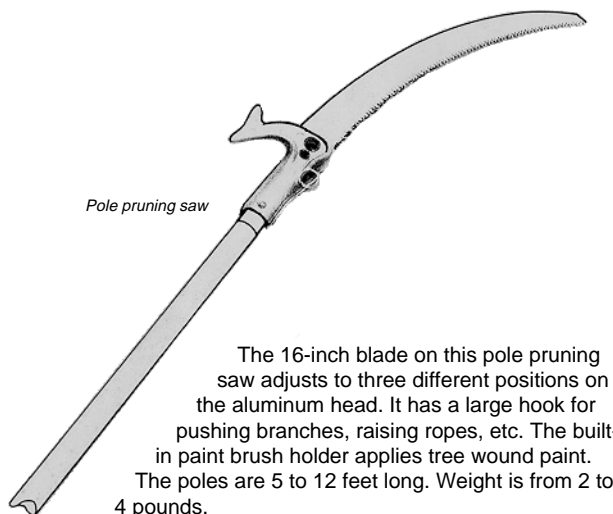
The telescoping fiberglass tree pruner has a blade that cuts limbs up to $1\frac{1}{4}$ inches in diameter. The multipower pulley design and gear-driven lever give three times more cutting power. The 16-inch needle-point saw blade cuts on the pull stroke to reduce binding. Telescoping fiberglass pole adjusts from 6 feet to 12 feet. Weight is 7 pounds.

Cord-actuated pruner



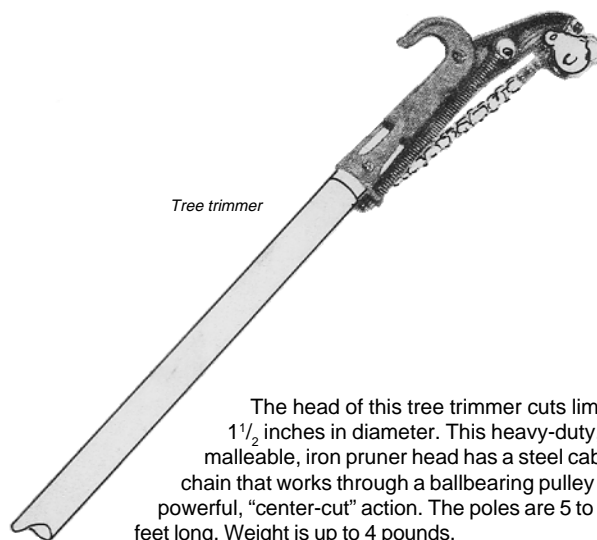
The cord-actuated pruner blade on this 15-foot long pruner cuts limbs up to $1\frac{1}{8}$ inches in diameter. A multipower leverage system increases your pull on the cord 15 times for quick, easy cuts. The 16-inch needle point, Teflon-coated saw blade cuts on pull strokes to reduce binding. The three 5-foot wooden poles may be quickly assembled and taken apart. Weight is 7 lbs.

Pole pruning saw



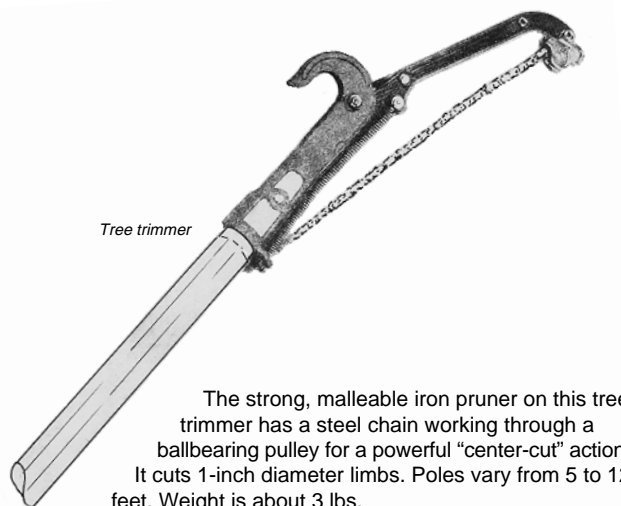
The 16-inch blade on this pole pruning saw adjusts to three different positions on the aluminum head. It has a large hook for pushing branches, raising ropes, etc. The built-in paint brush holder applies tree wound paint. The poles are 5 to 12 feet long. Weight is from 2 to 4 pounds.

Tree trimmer



The head of this tree trimmer cuts limbs $1\frac{1}{2}$ inches in diameter. This heavy-duty, malleable, iron pruner head has a steel cable chain that works through a ballbearing pulley for a powerful, "center-cut" action. The poles are 5 to 6 feet long. Weight is up to 4 pounds.

Tree trimmer

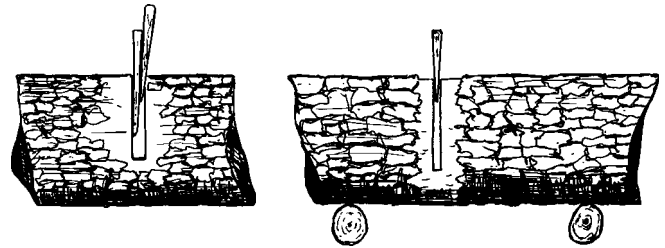


The strong, malleable iron pruner on this tree trimmer has a steel chain working through a ballbearing pulley for a powerful "center-cut" action. It cuts 1-inch diameter limbs. Poles vary from 5 to 12 feet. Weight is about 3 lbs.

Wedges

Use wedges as levers to prevent the sides of a cut from pinching a saw blade before the cut is finished. Most jobs require soft wedges that will not damage saw teeth. ABS plastic wedges are available in different lengths, widths, and weights. Some have metal inserts in the heads. Other types of wedges are designed to be used in combinations for felling. Wooden wedges are no longer used by the Forest Service.

Select the correct wedge for the job. Replace wedges when they become chipped or broken.



Using one or more wedges keeps a saw blade from being pinched.

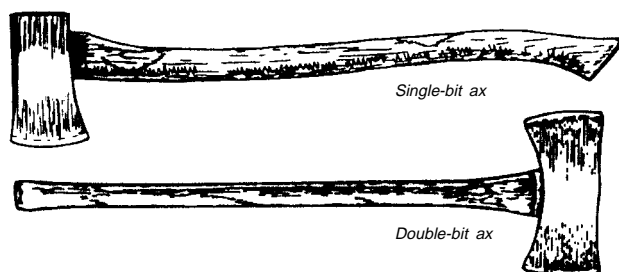


Tools for Chopping

Axes

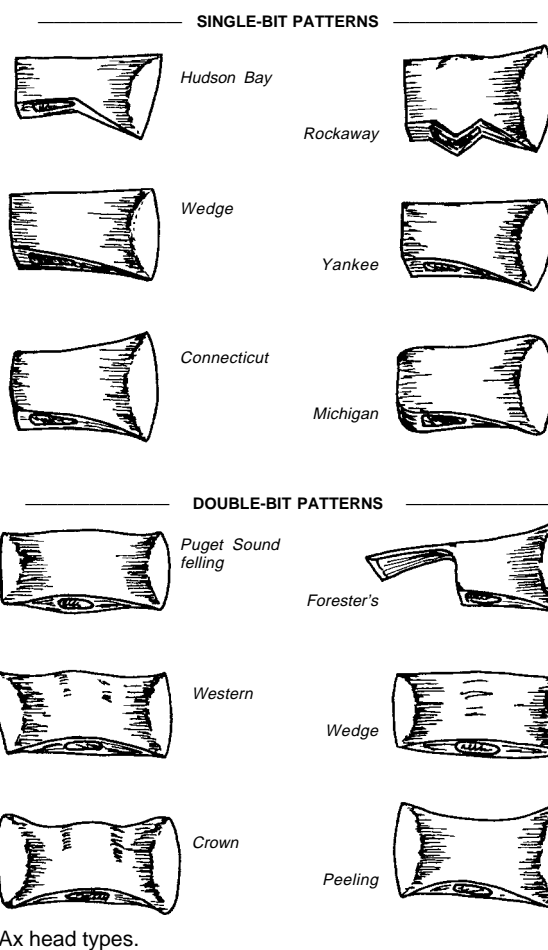
The ax is a traditionally American handtool that has been used from Colonial times. Different head patterns distinguish axes from different regions.

Axes are of two basic types—single or double bit. Single-bit axes have one cutting edge opposite a flat face. Double-bit axes have two symmetrically opposed cutting edges. The single-bit ax is used when safety is paramount. Some workers prefer the double-bit ax. One edge is maintained at razor sharpness and the other is kept somewhat duller for chopping around rocks or dirt. Mark the duller edge with a spot of paint.



Modern axes incorporate many variations in handle length and head weights. Handles range from 32 to 36 inches, and heads from 2 to 4 pounds. A wide variety of head patterns is available. Broadaxes are used for hewing bridge timbers. If properly used and maintained, axes are effective for removing downfall, trimming limbs along a trail, and for felling. The flat end of a single bit may be used occasionally to pound stakes or wedges, but it is not designed for heavy use. Prolonged use for pounding will loosen the head, chip the face because it is not hardened like a hammer face, and warp the eye, causing problems with rehandling and balance.

Before chopping, check for adequate swing clearance and remove underbrush and overhanging branches that might interfere. Be sure your footing is stable and secure. Chop only when you are clear of other workers. Stand comfortably with your weight evenly distributed and both feet planted shoulder-width apart. Measure the correct distance to stand from the cut by holding the handle near the end and stretching your arms out toward the cut. You should be able to touch the blade to the cut. Begin chopping by sliding your forward hand within 6 inches of the head. As you swing, your forward hand slides back down the handle to the other hand. Just after impact, give the handle a slight twist to pop severed wood out of the cut.

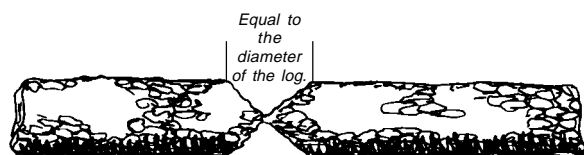
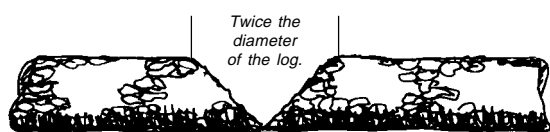


Proficiency with axes requires practice. In general, the force of the swing is not as important as accurate placement. You should learn to “switch hit” with the ax, alternating your forward hand on the handle between chops while maintaining a firm grip with the other.

Always chop away from your body. Stand so a glancing blow won't strike you. If you must cut toward yourself, “choke up” on the handle with both hands and use short swings to give more control.

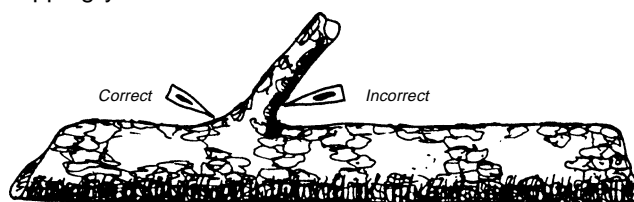
Chopping through a log requires a cut width twice the log's diameter to prevent the sides from converging before you are through. If opposing cuts are used, make each as wide as the log's diameter.

When limbing, cut on the underside of limbs and not in the crotch. Fewer chops are required and there is less chance that the ax will wedge between the branch and trunk or glance off. You are also more likely to chip blades because



Chopping through logs.

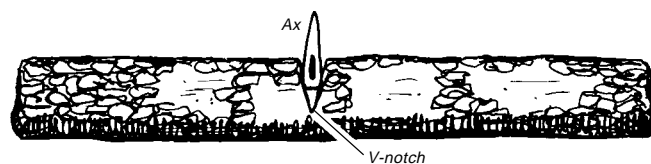
crotch wood is dense. When chopping branches above the crotch, place something solid under the chopping point to prevent the branch from springing back and slapping you.



Using an ax for limbing.

Carry axes by your side with the head forward. Grasp the handle firmly just behind the head and keep the cutting edge away from your body and down. Sheath all axes before transporting.

When sharpening, consider the job at hand. If you must reshape the blade, maintain the original shape as much as possible. Discard axes with poor profiles or cracked heads. Grind the blade slowly, arcing with the grinder toward the blade's midpoint so it has a full-width convex bevel. Be careful not to hollow grind blades, which produces a concave blade bevel the radius of the grinding wheel. Finish with a mill bastard file and an ax stone.



Sharpening in the field.

When sharpening in the field, secure the ax so both hands are free. A double-bit can be lodged in a tree stump or log, and a single-bit can be secured with the butt end in a V-notch. Wear gloves on both hands, and use a file guard on the file. Finish with an ax stone.

Hatchets

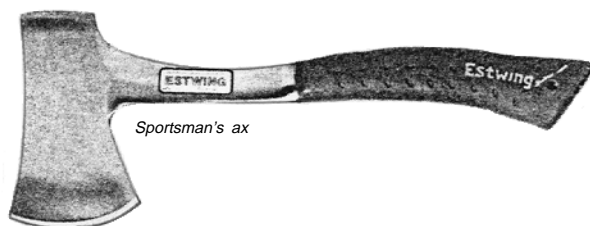
Many trail workers include hand axes or hatchets among their tools. Hatchets work well for trimming small green stems or freshening blaze markers along the trail. They are easily and safely carried in belt-mounted sheaths.

Hatchet heads are usually made of heat-treated steel designed to accept wood or fiberglass handles. Some have a steel handle forged to the head. They can weigh from 1 to 3 pounds and handles range from 10 to 16 inches long.



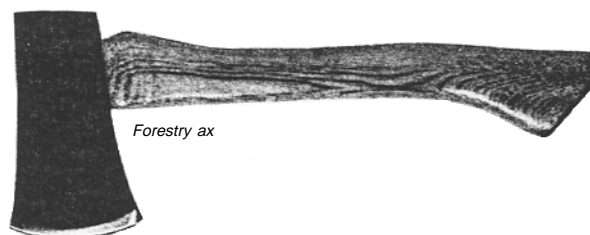
Use and maintain hatchets like regular axes. Remember that these tools are not designed for excessive pounding. Additional hazards may also exist for users because hatchets are single-grip tools.

Examples:



Sportsman's ax

A sportsman's ax has the blade and handle forged from one-piece steel. The length is $13\frac{1}{2}$ inches and the blade is $3\frac{1}{4}$ inches. Weight is 24 ounces.



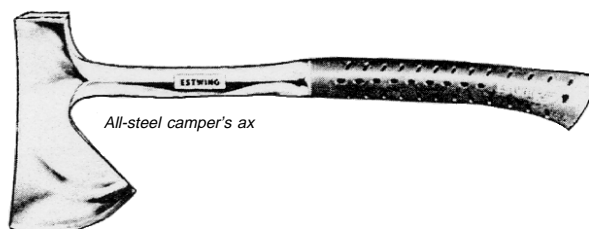
Forestry ax

The forestry ax has a $1\frac{1}{4}$ -pound head, 14-inch hickory handle, and weighs $1\frac{3}{4}$ pounds.



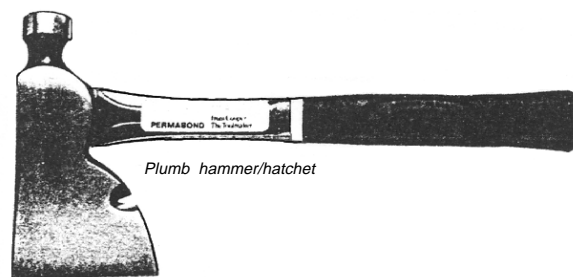
Tree-sounding ax

The tree-sounding ax has a $\frac{1}{2}$ -pound head that is designed for "sounding" trees. Foresters like its small size (10 inches long; $2\frac{1}{2}$ -inch blade) for carrying in a vest or jacket pocket. Weight is 1 pound.



All-steel camper's ax

An all-steel camper's ax is 16 inches long and is forged from one-piece steel. It has a 4-inch blade, and weighs $2\frac{3}{4}$ lbs.



Plumb hammer/hatchet

A plumb hammer/hatchet is a half-hatchet with hardened, tempered bit and a strong fiberglass handle. It has a 3- to 4-inch bit, is about $13\frac{1}{2}$ inches long, and weighs $2\frac{1}{2}$ lbs.