

VOLUNTEER VACATION

INTRODUCTION TO TRAIL MAINTENANCE



Unfamiliar with some of the technical jargon in the project description? Although trail maintenance is often best explained with a hands-on approach, the following document will clarify what your project could entail. See below for a Glossary of common trail maintenance terms, a commonly used Tools List, and a brief run-down on Tool Safety. More in-depth information and training will be provided on your Volunteer Vacation prior to starting work.

Glossary of Common Terms

Trail Anatomy

These terms describe parts of the trail.

Berm: The raised outside edge of a trail. Often used on mountain biking trails or to provide a direct route for water runoff to follow.

Buffer Zone: A protective strip of land on either side of a trail that separates public recreation from sensitive natural areas and external disturbances.

Grade: The steepness or slope of a path, measured as a percentage of vertical rise divided by horizontal distance.

Outslope: The tilt in the surface of the trail created to promote drainage and prevent erosion.

Trail Corridor: The entire physical space surrounding and including a path, which encompasses the walking surface as well as the clear air space above and to the sides.

Trail Right-of-Way: The cleared space around the walking surface that allows hikers to pass safely and comfortably. It includes the width on either side of the tread and the clearance overhead, free of branches, brush, and other obstructions.

Tread: The actual travel surface of the trail.

Drainage

These terms describe how water is moved off the trail to prevent erosion.

Backfill or fill: Mineral soil used to support a drainage structure.

Drainage Dips: Gently shaped depressions constructed in an existing trail to catch and divert water off to the side.

Outflow: The channel dug downhill from a drainage structure where water safely disperses after being diverted off the trail.

Reinforced Dips: Drainage structures consisting of a water bar buried under a layer of compacted soil.

Host Guide (continued)

Water Bars: Drainage structures made of rocks or logs embedded at an angle across the trail to divert water and prevent erosion.

Trail Structure

Built features that help stabilize and support a trail.

Cribbing: Retaining walls, usually constructed with rocks or notched logs.

Puncheons: Simple wooden walkways constructed through wet, boggy areas to provide a hardened surface for hikers.

Stabilizers: Used to hold the soil in place and prevent erosion. Stabilizers include rock steps and cribbing.

Turnpike: A trail segment with raised tread built by placing rocky or mineral soil fill between logs or large rocks, most often used in boggy situations.

Clearing and Marking

Maintenance tasks and what they address.

Basic Trail Maintenance: Upkeep involving annual drainage cleaning, clearing of blowdowns, brushing, and blazing.

Blazes: Signs used to mark the route of the trail, usually painted at regular intervals on trees and rocks along the way.

Blowdowns: Trees that have been toppled by the wind.

Brushing: Clearing the trail.

Deadfall: A tangled mass of fallen trees or branches.

De-berming: Removing the berm from the trail, often using a McLeod.

Flagging: The action of tagging trees and shrubs to indicate where the mid-line of future tread will go.

Commonly Used Tools

Special thanks to the [South Carolina State Trails Program](#) for use of selected text and graphics. See their website for more information and tools.

Weed Whip (Swizzle Stick)		The weed whip is used to clear trail corridors of succulent vegetation (grass, light brush, briars, and tree seedlings). It is meant to be swung back and forth with both hands.
----------------------------------	---	--

Host Guide (continued)

Machete		Machetes are best used to clear the way when surveying new trails routes through dense vegetation.
Lopping Shears (Clippers, Loppers)		Loppers are designed for clearing heavy vegetation from trails. With their long handles a sturdy pair has the mechanical advantage to cut cleanly through all sorts of brush and branches (most cut limbs of 1 to 1 ¾ inches in diameter).
Axe		Axes can be used to chop deadfall from trails, shape stakes for turnpikes and water bars, and cut notches for structures made of timber. Most trail crews use the single bit axe (one sharp side) versus the double bit ax (two sharp sides) feeling that one sharp blade is safer than two.
Bow Saw		A bow saw with a blade 16 to 21 inches in length is handy for cutting brush out of the trail and trimming small branches.
Pulaski		Developed to grub and chop duff during forest fires, the Pulaski combines an axe bit with an adz-shaped grub hoe. It is preferred by many trail crews for loosening dirt, cutting through roots, or grubbing brush.
McLeod		The McLeod is useful for removing berm from a trail and smoothing tread.
Mattock		A mattock is a sturdy grubbing tool with an adz blade that can be used as a hoe for digging in hard ground. The other blade of a mattock may be a pick (pick mattock) for breaking or prying small rocks or a cutting edge (cutter mattock) for chopping roots.

Tool Safety

Your host will provide the tools for your project and show you how to use them safely. These basics apply to everyone on the crew, whether it's your first trail day or your fiftieth.

1. Get a Grip.

Make sure you have a strong grasp on your tool. Wet or muddy gloves may cause a tool to slip from your hands, striking you or someone near you. Clear limbs, loose rocks, or other debris from your footing area to ensure you have a firm, balanced and comfortable stance before starting your work.

2. Be Aware of Your Surroundings.

Be aware of your surroundings. While chopping or brushing, be aware of other people nearby—not only fellow crew members, but also trail users. The combined length of your arm and tool is longer than you or others may think. Be especially careful of others stepping into the area of your backswing.

TIP: *Always carry tools in your hands and down at your sides—not slung over your shoulder. Use blade guards when possible!*

3. Choose the Right Tool for the Job.

The wrong tool can force you to work in an awkward stance which will wear you out quicker. Your host will assign tools for each task, so if you're unsure which one you should be using, just ask.

TIP: *Sharper is safer! A dull tool that bounces off of what it was attempting to cut can be dangerous. A sharp tool will cut faster and be less tiring.*

4. Gear Up.

Protective gear only works if it's on before the first swing. Wear sturdy closed-toe boots, long pants, eye protection, and gloves, plus a hard hat whenever your host asks for one or there are overhead hazards.

TIP: *If your gear gets wet, torn, or uncomfortable, say so. It's easier to fix before you start than halfway through the day.*

5. Give Each Other Room.

Keep at least 10 feet or 4 tool lengths between you and the nearest person when chopping, digging, or brushing. Space matters most when you're swapping places or working on a slope where a slip can carry a tool farther than you'd expect.

TIP: *If someone steps into your work area, pause until they've moved clear.*

6. Carry, Pass, and Set Down Tools with Care.

When handing a tool to someone, let them know first and pass it handle first. During breaks, set tools down with the blade guarded or pointed away from the path where no one can trip over them or step into them.

TIP: *Before you walk away from a tool, ask yourself, "Could someone get hurt on this?"*

7. Report Tool Problems, and Don't Use Damaged Ones..

If a tool feels loose, looks cracked, or has a dull or chipped edge, set it aside and tell your host. They'll swap it out or fix it, so you never need to work with a tool you're unsure about.

TIP: *Not trained on a tool yet? Ask for a quick demo. Hosts expect questions and appreciate them.*

8. Pace Yourself.

Tired hands make mistakes. Take breaks, drink water, and speak up when you're getting worn out or overheated. Trail work is a team effort.