



TRAIL ADOPTER MANUAL
2008

Responsibilities

Level I Trail Adopter:

This trail adopter will hike their respective trail at least twice per year once in May/June and once in August/September and report any trail concerns, maintenance issues, or insights back to the SLA by filling out and returning our trail adopter forms either on line or by hardcopy.

Level II Trail Adopter:

This trail adopter performs the duties of Level I as well as light maintenance such as clearing dead and live vegetation from the trail. On less popular routes this is a never ending task. A properly cleared trail is one that you can hike after a rain storm and not get wet from hitting branches. This can be done using loppers and handheld pruners see the Trail clearing chapter. Once a trail is thoroughly cleared or 'standardized,' it should not need further trimming for several years; but we live in the Northeast, folks, and everything out there is growing all summer long. If regular maintenance is deferred for too many years, you will discover that your assignment has turned into a chore and that it will take you or a trail crew, days, not hours, to complete. Level II adopters may also repaint blazing. Materials for this are supplied by the SLA.

Level III Trail Adopter:

This trail adopter performs the duties of Level I and Level II as well as harder maintenance activities such as carrying a hoe or fire rake to clean out water bars, or cutting small trees or limbs with a bow saw to remove them from the trail.

Nearly every popular trail on sloping terrain is a candidate for erosion. It is characterized by bare, compacted soil in a narrow ditch which channels the water for long distances. Runoff during a thunderstorm can be substantial, and inevitably the ditch widens and deepens. Drainage ditches which divert the water off the trail do more to prevent that from happening than anything else. They protect both the trail and the land over which it leads. To prevent the sides of the ditch from being broken down by foot traffic, log or stone water bars are placed on the downhill side of the ditch.

A three-person trail crew can build two to four water bars a day, depending upon the availability of suitable materials. Over a ten-year period, SLA has installed drainage on many of its major or heavily used trails, and that adds up to a substantial investment. As an adopter, your job is to make sure that the water bars continue to divert water off the trail as intended.

1) You should hike your trail in May or June to clean out accumulated silt and leaves from water bars and ditches. This is your most important assignment. It is always helpful if you can complete any needed work outlined in #2, #3 and #4 early in the season, but #1 is a job that must be done before the first heavy summer downpour. The goal is to prevent water from running down the trail.

2) Winter blow downs must be removed, but this assignment is usually of secondary importance. Often it does not matter when they are cleared away, but it is best if this work can be done by the middle of summer. Take with you a bow saw to cut up small trees. Leave the mighty oak to SLA's chain saw.

3) At almost any time of year, vegetation that has grown in from the sides can be cleared back. Ideally, it should be possible to hike a trail after a rain without getting wet from brushing against branches that have grown into the trail corridor.

4) The lowest maintenance priority for a Level III trail adopter is usually re-blazing. If hikers appear to be wandering off the trail at one or two locations, it is often possible to direct them by piling rocks, logs and fallen limbs.

Level IV Trail Adopter:

This trail Adopter is similar to a Level III adopter with the addition of building water bars, constructing bog bridges, and using chainsaws to remove large blow downs.

Trail Adopter Equipment

Adopters are asked to provide as many of the following tools as possible. If you do not have some of these tools you may be able to sign tools out from the SLA on a day to day basis.

Level I

1. A supply of Trail reports or access to the online form located at:
<http://www.squamlakes.org/programs/trailreport.php>
2. The ability to hike your trail twice per year.

Level II

1. Level I Equipment.
2. A pair of long handled pruners or loppers.
3. A pair of small rugged handheld pruners.
4. Weed cutter
5. Work gloves

Level III

1. Level I & Level II Equipment.
2. Small or large bow saw
3. One of the following: Garden hoe, adz, gravel rake, fire rake, grub hoe, or hazel hoe
4. Paint and brushes supplied by SLA

Level IV

1. Level I, Level II & Level III Equipment.
2. Chainsaw
3. Rock bar
4. Shovel
5. Grip hoist & wire rope
6. Axe
7. Personnel Protective Equipment
8. Sharp Adz
9. 5 gallon bucket
10. Pick Mattock
11. Cutter Mattock

Trail Clearing

Without a regular clearing, all but the most heavily used trails can become overgrown in just four to five years. The proper width for a cleared trail varies with terrain and vegetation. A four to six foot clearance suffices in most situations. Normally a trail is cleared to a height of eight feet or as high as one can reach.

Low shrubs and young trees should be cut close to the ground for aesthetic reasons to prevent tripping and to keep stumps from sprouting. Avoid leaving potentially dangerous, pointed stumps. Low growth should be removed back to the outside edge of the cleared trail. Annual growth such as ferns can be left to die later in the summer and fall, unless it is particularly thick and aggravating.

Special attention should be paid to small softwoods and to the lateral branches of larger softwoods. Their needles become wet on a misty mountain day, and if brushed they get hikers wet quickly. Limbs on these trees should be cut flush with the trunk or stem. Stubs are ugly and they can create annoying snags for packs and clothing. Lateral branches growing toward the trail should be cut back to the limb growing parallel to the trail. If trees are pruned in this way rather than being indiscriminately chopped, 'sucker growth' will be reduced. Sucker growth occurs when a root system geared to provide nutrients to a tree of a certain size causes increased growth in the remainder of the tree when a large part is removed. By leaving growth directed away from the trail, future maintenance requirements can be reduced.

If a short treetop has to be removed, it is generally better to remove the whole tree, since removal of the terminal bud will accelerate lateral growth into the trail and leave an unsightly tree. Cutting all lateral branches on the trail side is the second best option — still better than cutting off the top of the tree only. Note that selective clearing along a trail can be a means of directing hikers or keeping them from following certain routes — such as short-cutting across the end of a switchback.

Care should be used when clearing trails on ledges along high ridges or on tops of mountains where the climate is severe and growth rates are very slow. Trees three to four feet tall can be sixty to seventy years old. Small trees and shrubs at such locations grow in interdependent communities called 'krummholz.' Removal of one tree in a patch of krummholz can jeopardize the other ones which join roots and branches in protection against wind and cold. In these areas, the cleared width of the trail should be reduced to three or four feet. Prune limbs rather than completely cut trees or ground vegetation.

A good clearing job can be completely nullified if branches and debris are not removed from the trail. (In certain areas, flat brush may be utilized to make a small, muddy area passable.) Brush left in the trail can obscure roots, rocks and holes in the trail. Pick up all branches, trees and debris and scatter them off the trail. Piles should be avoided because they are unsightly and can create a fire hazard. Downed trees are best dragged butt first until the top is completely off the trail. This will also serve to conceal the tree from hikers. Large limbs and small trees can be thrown clear of the trail, provided they do not hang in the branches of shrubs and trees next to the trail or stick out butt first.

Long-handled clippers (loppers), hand held pruners, and bow saws are the most commonly used tools for this work.

Scree Wall Maintenance

Scree (small rocks and brush) is placed alongside most rock and log steps to contain hiker travel in the middle of the trail and on the steps. Without it, hikers will sometimes avoid steps, no matter how well placed, and walk along the sides, eventually causing steps to be undermined. Scree is also placed alongside water bars and some stretches of exposed trail to define the treadway and to contain traffic.

Maintenance of these small walls or bands of scree simply involves removing scree that has fallen into the trail or onto steps and replacing it along the sides. If evidence exists of people stepping over existing scree walls, make them higher.

In areas where rock or log steps do not have scree and it appears that some is needed to keep people on the trail, you can gather various-sized stones and place them on both sides of the steps. Use only loose rock already in the trail or gather it off the trail and out-of-sight. Large rotten or gnarled logs will do the trick also. Only a few are necessary. A pile of brush or rock three feet high is not needed to persuade a tired hiker that it is easier to stay on the trail. However, do not use small pieces of dry brush because they are too easily removed.

Shortcuts and Bootleg Campsites

Should you come across shortcuts or places where hikers have been cutting corners or switchbacks, first look to see if you can figure out why it is happening. Sometimes a blow down will force people to take a different route, or a blaze or cairn in the wrong place is incorrectly directing people. Correct the problem, if one exists, and then brush over the reroute or shortcut. Use large rotten or gnarled brush and logs gathered off the trail and out-of-sight.

Tent sites beside the trail should be brushed in to discourage further use and to encourage re-vegetation. Most SLA trails are on private property where camping is not allowed anyway. Camping is permitted within the national forest, but some locations, such as Black Mountain Pond, are suffering from excessive overnight use. At such places, camping should be discouraged. One way to do this is to break up and disperse fire-rings and ashes (make sure the ashes are cold). Pick up litter and brush over the site with large rotten and gnarled logs and brush gathered away from the trail.

Maintaining Trails in a Wilderness Area

Parts of two SLA trails are in the Sandwich Range Wilderness: the Algonquin Trail and the Black Mountain Pond Trail. Maintenance standards are different on those portions that lie within the wilderness. For example, trails should be cleared only four to five feet wide, and blazes should be less frequent than suggested on page 9. The use of power equipment is not allowed.

Maintenance of Trail Drainage

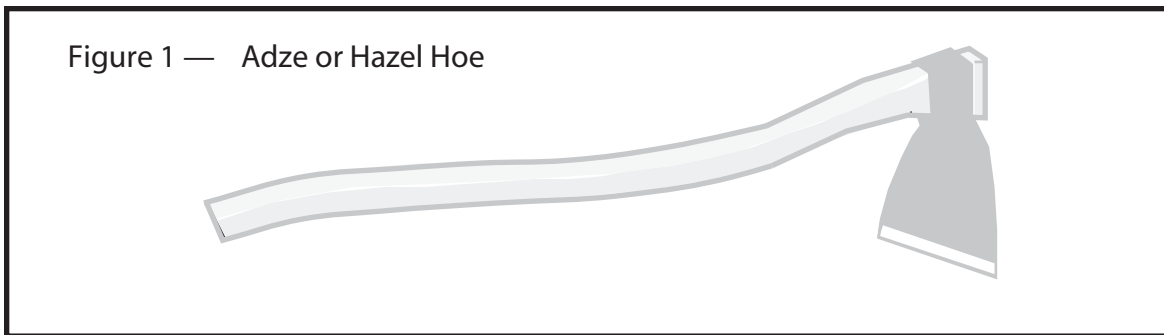
As hiker traffic increases on any trail, the soil gets compacted and becomes more susceptible to erosion, especially during heavy or prolonged rain. Throughout the White Mountains, trail crews have spent hundreds of days reconstructing trails and installing drainage structures. Unfortunately, one does not have to hike a lot to discover that much of

their work has not been receiving proper, annual maintenance. Each water bar, for instance, takes two people from two to three hours to construct; yet it takes only a few minutes during a drenching summer cloudburst to overwhelm a clogged one, possibly causing damage to the water bar itself and almost certainly to the trail below. It also takes only a few minutes to clean accumulated debris from each ditch. Annual maintenance is as necessary for a trail system as it is for many other things on which we have invested time and money in the past.

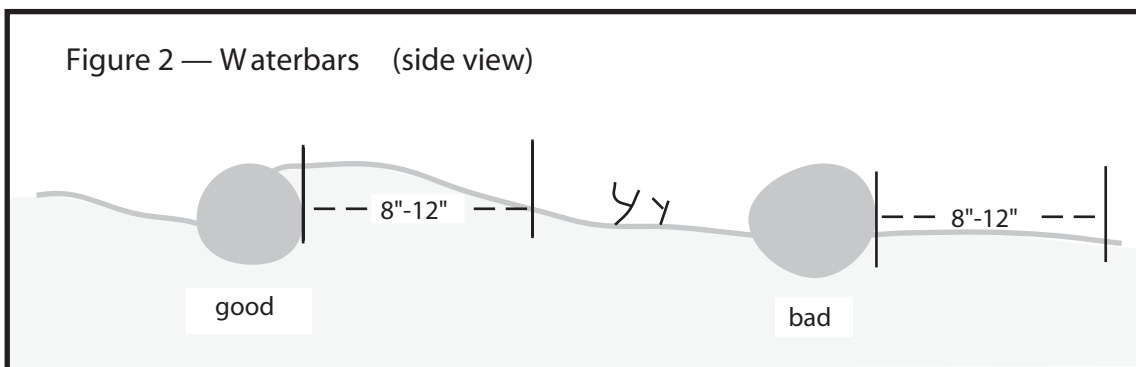
The most important trail maintenance task is the proper cleaning of drainage. This includes log and rock water bars, drainage dips ('dirt water bars') and ditches. Occasionally, it even includes cleaning of debris from small streams.

If drainage is not cleaned at least once annually, severe trail erosion may result; and existing trail work (rock steps, cribbing, etc.) may become undermined. The spring or early summer is the best time for this work. If time permits, it would also be good to clean drainage after the leaves have dropped in the fall. This would ensure good drainage in the late fall/early winter when the ground is frozen and seeps appear just about everywhere, as well as in the late winter/early spring during snow melt and spring rains.

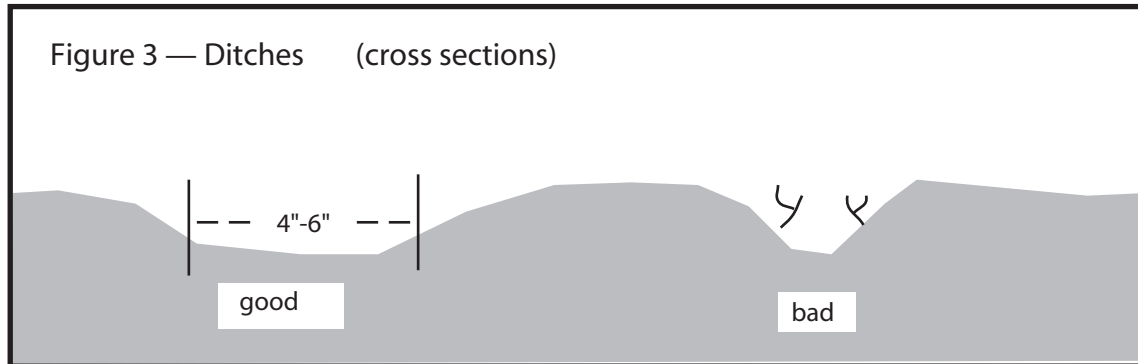
The most versatile and effective tool for cleaning drainage is the adze or hazel hoe, which has a 6-8" wide blade and a long bent handle. A fire rake or garden rake is good. A shovel works well also. A pick mattock or cutter mattock will do the trick, but each takes extra work as the blade is narrow and the tool is heavier.



When cleaning drainage, pull all soil and debris in water bars and drainage dips up over the water bar or dip and deposit it on the downhill side, in the trail. This backfills the water bar and rebuilds the dip. Do not shovel or hoe the soil out the end and off the trail. Water bars that do not have sufficient backfill on the downhill side are apt to be undermined, and dips that are allowed to wear down too much may allow



water to flow right over them. In addition, grade the uphill side of the ditch in the trail. Do not leave it steep-sided as traffic and water will only collapse it, and the soil will re-clog the water bar or dip. Cut out loose roots as they collect debris. Clean log water bars down to approximately 1-2" above the bottom of the log.



Any drainage ditch off the end of a water bar or dip should be straight, wide, deep and root-free, with side slopes graded and long enough to ensure that the water will be taken well off the treadway and not come back onto the trail below. Curved ditches slow the water down, causing the formation of silt deposits which clog the drainage. If too narrow and rooty, the ditch will plug up; if too shallow, water may overflow. Steep sides are apt to collapse and clog the ditch. They also heal more slowly and may be an eyesore.

In some areas of wet, saturated soils, long drainage ditches are located along one or both sides of the trail to provide drainage for ground seep and to create a high, dry trail tread. These ditches need to be checked each year and cleaned — otherwise they begin to silt in, and vegetation grows back. The same cleaning principles apply to these as to the ditch of a water bar or dip. Do not leave huge unsightly mounds of dredged mud and debris along the side of the ditch — spread them around. Soil can be thrown onto the trail to build up the tread. Though the soil may be wet, it will soon dry out.

Streams with shallow channels that cross a trail should be kept clear of debris, particularly brush which may clog the stream, forcing it to jump the channel and run down the trail.

Blazing

The standard SLA blaze is rectangular (2" x 6") and yellow. If your trail needs blazing, SLA will supply as much of the following as you need: paint & rags, a 1" paint brush, paint scraper, and a wire brush

Procedures

Most blazing on SLA trails involves repainting. Because some of the earlier blazing was done carelessly, there may be too many blazes, or they may look sloppy. Try to improve the appearance of your trail by not repeating past mistakes.

Only those blazes necessary to properly mark a trail should be repainted. Try to scrape off that part of an old blaze which is wider than 2 inches without injuring the tree. Use a small rock if you do not have a wire brush. Even when you cannot remove old paint, do not make the freshly painted blaze more than 2 inches wide. Since the bark on small trees expands rapidly, try

to avoid placing new blazes on them. If that does become necessary, make them narrower than two inches.

Old blazes on trees and rocks should be cleaned with a wire brush or a scraper before repainting. Never scrape so hard that you injure a tree by cutting through the outer layer of bark. Clean blazes on rocks with a wire brush.

Before a junction or a turn off a logging road, place double blazes, one on top of the other. This is the standard sign for hikers to proceed cautiously.

Spacing

The distance between blazes depends upon the condition of the tread way and the nature of the woods, but only minimal blazing is needed on a heavily used trail.

In open hardwood areas, blaze so you can see from one blaze to the next (about 30-50 feet). This is especially important for hikers in the fall and winters when leaves or snow obscure the trail. In softwoods where the trail is obvious, you might place a blaze, look ahead to the furthest tree you can see clearly, and then place another blaze just beyond. This generally results in blazes every 100-150 feet. In dense softwoods where the trail is obvious, blazes can be even farther apart.

On exposed ledges where the trail has cairns, blazes every 100-200 feet should suffice. On open ledges where no tread is visible and cairns are scarce, they should be closer together.

The basic rule in any area is simple. If you (someone who is somewhat or very familiar with the trail) are not sure where the trail goes, blaze it closely. On the other hand, do not make the trail look like a highway with blazes every ten feet. Make blazes neat. Wipe up any spills and runs. Do not leave gobs of paint on the lower end of a blaze. Though it dries quickly, it may run if there is too much.

Place new blazes about head height (6 or 7 feet high). Blaze a trail in one direction and then the other. Pick out the trees and rocks most visible to hikers going in each direction. If the trail is unclear to you, walk ahead and figure out exactly where it goes before blazing. Avoid blazing the front and back of a tree because two blazes will be lost if the tree is blown down. Do not mark dead trees.