

Trail Maintenance

Crew Briefing Booklet



Designed to be used for quick **Tailgate Briefings**
just before crews head out on the trail.

Don't forget the associated **Tailgate Safety Briefing**
(Refer to the TATC web site [www.tidewateratc.org] and Trail Maintenance,
Trail Maintenance Hazards)

Waterbar Maintenance

NOT

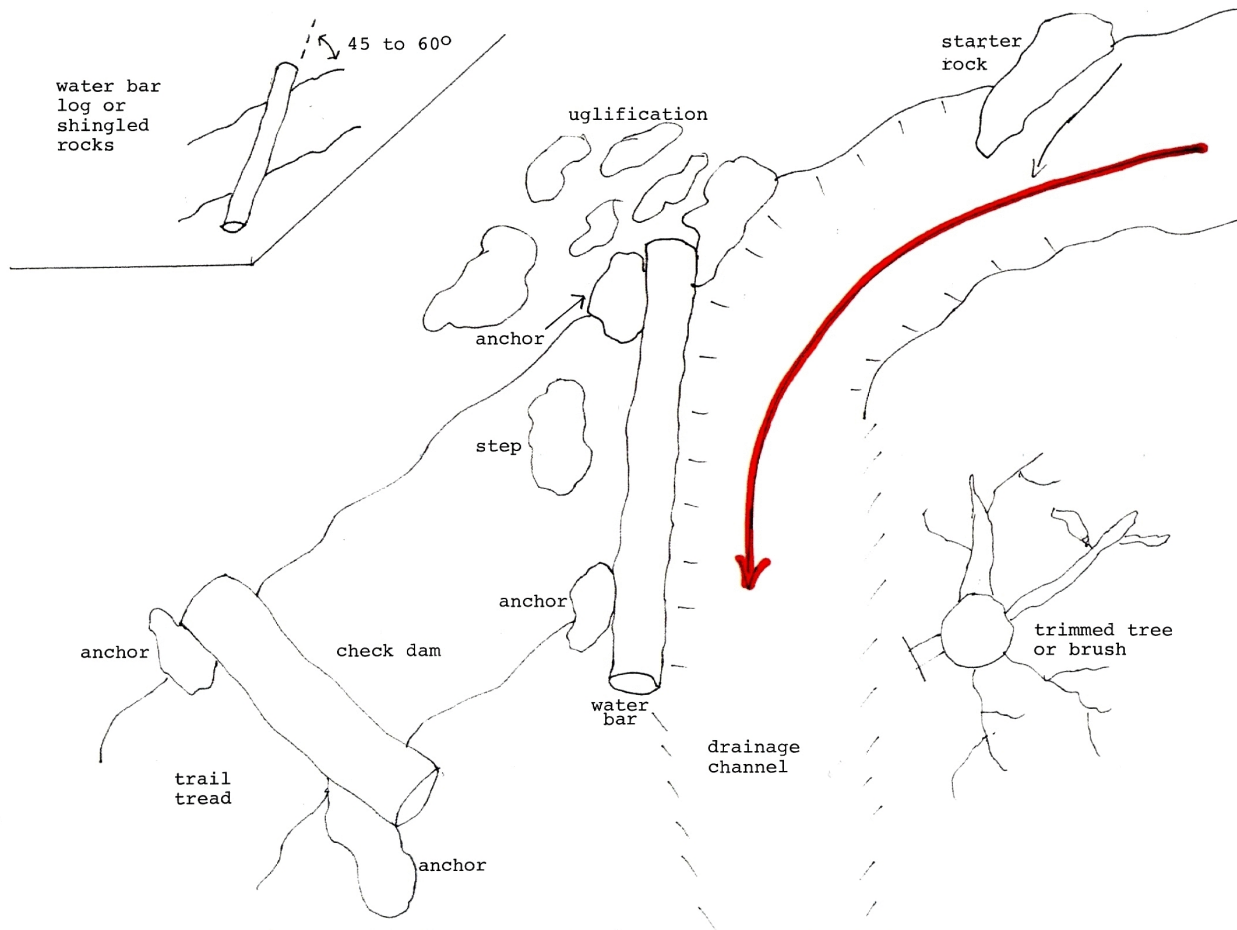
~~Waterbar Cleaning~~

And

Other Common Tasks

‘Cleaning’ suggests cleaning all dirt from around the waterbar and is **WRONG**.

‘Maintenance’ suggests maintaining the ‘Grand Prix Curve’ and is **CORRECT**.



A Waterbar Is a Support Structure

Run-off water should never reach
the Waterbar.

The Waterbar, rock, rocks, or log, is simply a
structure to support the
Grand Prix Curve (**red**).

The Grand Prix Curve (**red**) diverts water off
the trail into the Drainage Channel.

Waterbar Maintenance Tools Required

Two-Person Crew

Fire Rake - Loppers

Gloves - Hard Hat

Pulaski - Eye Protection

Larger Crew

Add a Shovel

(**Note:** The heavier duty Pick Mattock works
better than the Pulaski for waterbar
installation)

Waterbar Maintenance

1. Every person and every snowflake is different. Likewise, each and every Waterbar is different.
2. The terrain immediately above and below the Waterbar, and the Waterbar itself, must be evaluated on their own merits.
3. Are there steps or a level spot installed below the Waterbar to ease hiking over the Waterbar?
4. Is there a Starter Rock directing run-off toward the lower side of the trail, the Grand Prix Curve, and the Drainage Channel?
5. Determine where the Drainage Channel is, and how long it is. It may be from 2-ft to over 10-ft long. Figure out where the water will flow, and where you want it to flow.
6. Determine whether or not you need to trim branches, brush, and saplings over and near the Drainage Channel so that Waterbar maintenance can be accomplished.
7. Do **not** clog or dam the Drainage Channel with dirt, leaves, and/or branches removed during Waterbar maintenance, or trail trimming.
8. **Gently** remove leaves, twigs and branches from the trail uphill from the Waterbar, and from the Drainage Channel so that you can see what things look like.
9. Do not dig with the Pulaski, gently take many thin slices. Actually you lightly shave the ground, as if you were using an adz, to shape the Grand Prix Curve and clear the Drainage Channel. To prevent erosion, you want to leave solid ground wherever possible.
10. Work slowly and safely as you shape or reshape the Grand Prix Curve above the Waterbar and the Drainage Channel.
11. Loose dirt and gravel, **not duff**, should be saved as you remove it. This can then be moved with the fire rake or, better yet, the shovel to...
 - A. ...help slope and shape the Grand Prix Curve uphill from the Waterbar, and/or
 - B. ...make stepping over the Waterbar easier for hikers approaching from the downhill side.
12. Pack down all loose dirt on both sides of the Waterbar. Then pack it again. That's what those boots are for. You can also pack it with the back of the grub hoe blade on a Pulaski, pick mattock, or cutter mattock.
13. Walk the trail over the Waterbar from both directions to see if all is well. Correct as necessary. If needed, add more uglification rocks to prevent hikers from going around the Waterbar.



A Nicely Shingled Rock Waterbar after Maintenance.



A Starter Rock and Water Flow Can Be Seen.



A Simple Water Bar before Maintenance



A Simple Waterbar after Maintenance



99 44/100% of all trails are outsloped to allow run-off to flow off the trail downhill.

At a switchback waterbar the trail may be insloped for a few feet/yards above the Waterbar to divert water away from the Waterbar and off the trail at the switchback.



Downhill

Normal Sidehill Trailtread



Downhill

Water bar at a Switchback

Normal Sidehill Trailtread	Trailtread at a Waterbar at a Switchback
<p>OUTSLOPE</p> <p>99 44/100% of ‘our’ section of the A.T. is ‘outsloped’ out and down from the hillside to allow water to run off the trail and down the hill.</p>	<p>INSLOPE</p> <p>Behind a waterbar at a switchback the trail may be ‘insloped’ in and down toward the uphill side for several feet/yards uptrail from the waterbar. This keeps run-off water away from the waterbar, and takes it off the trail where the trail makes the switchback turn.</p>



Above Hanging Rock

Water Bars Are Pointed Out

Other Logs/Rocks are Steps



The Grand Prix Curve



The Grand Prix Curve Diverts Water Away from the Waterbar into the Drainage Channel. Note the Slope of the Curve.



Water Flow Around the Grand Prix Curve into the Drainage Channel. Do **not** remove the dirt against the waterbar - it forms the Grand Prix Curve. Firmly tamp any loose dirt with your boots or the back of the grub hoe blade on a Pulaski, pick mattock, or cutter mattock.



Poison Ivy - Leaves of Three, Let It Be - 24/365.
Leaves range from yellow to red to brown in the autumn.
Autumn-winter berries are grayish white.



Poison Ivy - Spring Growth



Virginia Creeper - Compound Leaves of Five, You'll Survive.
One leaflet is missing on the right-hand compound leaf.
Leaflets turn brilliant red in the autumn.
Autumn-winter, quarter-inch berries are dark blue to purple.



Stinging Nettle Leaves - Warmer Months

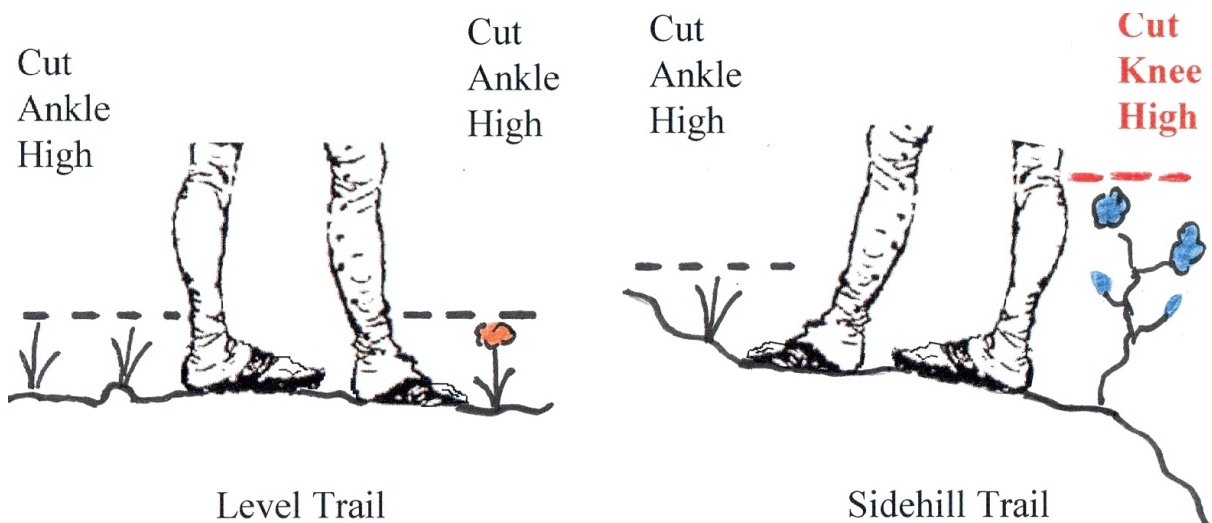


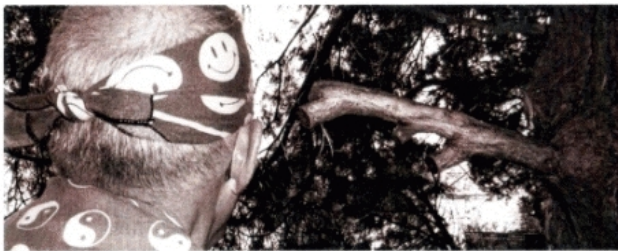
Stinging Nettle Flowers - Warmer Months



Trail Corridor

Cut growth back to provide a 4-ft wide 8-ft high Trail Corridor
(8-ft prevents rain or snow laden branches from hitting hiker faces)





Cut those head bashing snags
all the way back to the trunk
!!



Cut those saplings all the way to and parallel to
the ground. Don't leave a dangerous punji
stick.



Established campsite fire ring: Remove garbage to pack out. Dig out ashes and unburned wood and carry far off (200-ft, +/- 70 paces) into the woods. Do not just dump. Spread **thinly** over forest floor.



Rogue fire ring along trail: Remove garbage to pack out. Remove unburned wood, carry far off (200-ft, +/- 70 paces) into the woods. Do not just dump. Spread **thinly** over forest floor. Remove rocks and scatter widely in woods. Camouflage area with branches and leaves.

TRAIL MAINTENANCE AND CONSTRUCTION TASK AND RECOMMENDED SAFETY GEAR

Revised: March 5, 2013

Basic Safety equipment for all Trail work: Sturdy Boots, Work Gloves, Long Pants, and Appropriate Dress for the weather.

Maintain tools in good working condition; inspect tools and handles before leaving base camp; know your abilities and limits, take breaks before you are tired, and drink before you are thirsty.

Determine who in the crew has First Aid and CPR skills before leaving base camp. Communicate to the crew the individual responsible for transporting the First Aid kit.

Determine who in the crew has any special needs that could affect their safety: medicines, medical conditions, allergies, etc.

✓	Trail Tasks	Likely Job Hazards	Recommended Safety Gear	Additional Comments
	Seasonal Hazards	Nettles, rattlesnakes, copperhead snakes, bee-wasp-hornet-yellow jacket stings, ticks, biting insects, chiggers, thunderstorms & lightning, sun exposure, heat stroke, heat exhaustion, hypothermia, dehydration and/or lack of adequate water, the many & varied hunting seasons	Gloves, boots, head covering, long sleeves. If desired: sun tan lotion, insect repellent (follow directions implicitly) Hydration	Poison ivy ALL year. Stinging nettles. If you are subject to anaphylactic shock know that there is little to nothing that can be done for you in the field by a work crew. Leave ridge crests before a thunderstorm arrives. If you can hear Thunder you are close enough to be struck by lightning.
	Balds Clearing	Sharp Tools, back and arm strain, dehydration, loud noise (if using power equipment), lightning, overexposure to sun, rain, or wind	Gloves, boots, sun hat, sunscreen, wrap around eye protection, weed eater harness, and hearing protection (if using power equipment)	Drink at least two quarts of water per day, keep proper spacing between workers, and leave Ridgecrest during lightning storms.
	Blowdown Removal and Brush Cutting (Trail & Fire Road Trimming) with Pruning Saw, Bow Saw, Loppers, other Hand Tools. Also see 'Spring Poles.'	Sharp tools, loose footing, flying brush, poison ivy, nettles, bee stings, snakebites, nettles, limbs under tension, uneven ground, tripping on cut items	Gloves, boots, wrap around eye protection, shin guards (optional)	Have soap and wash water available; know who is allergic to bee stings and poison ivy.