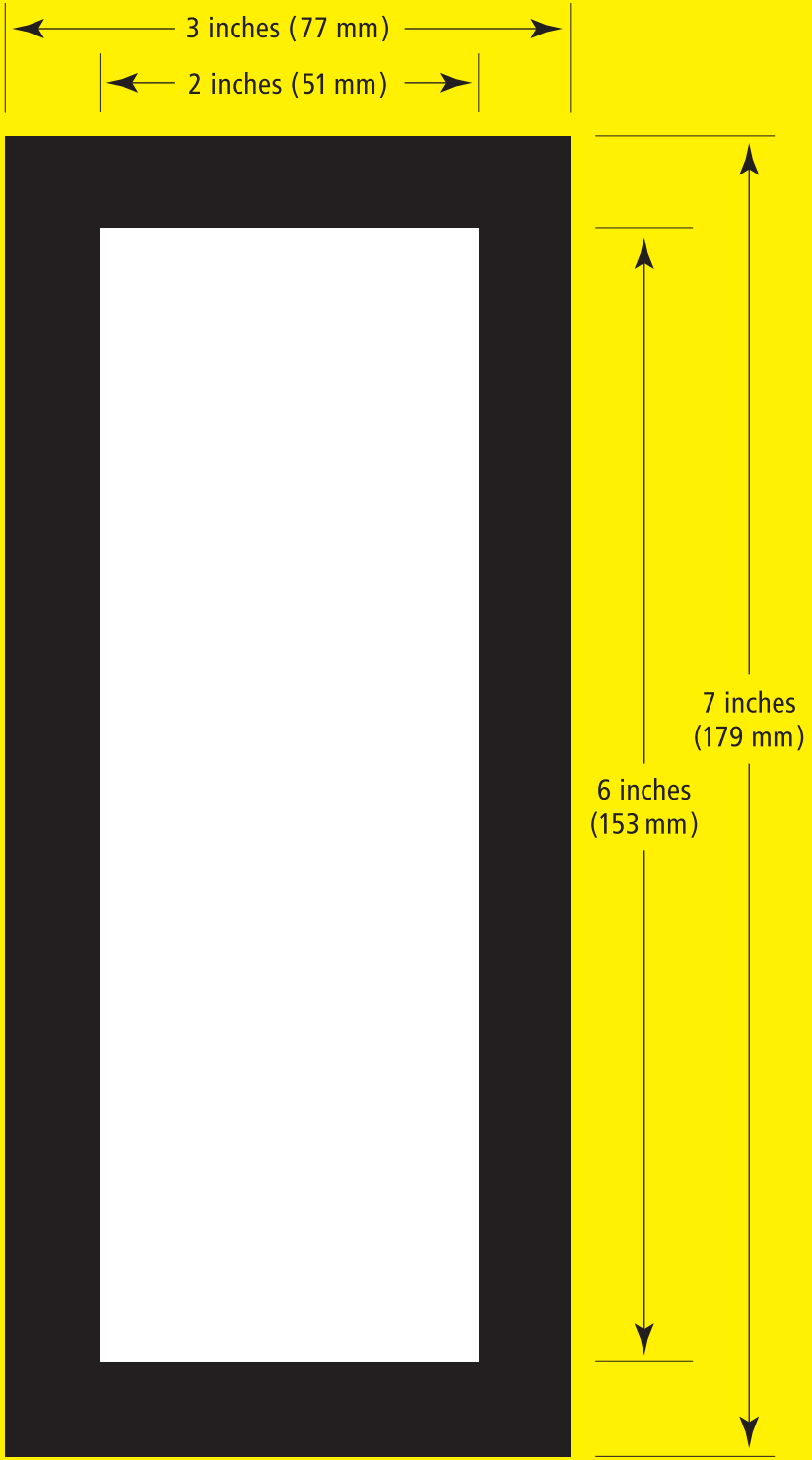

Standard Bruce Trail Tuxedo Blaze – actual size

Basic Trail Maintenance

GUIDE

for Trail Captains and Trail Workers

Bruce Trail
CONSERVANCY

Basic Trail Maintenance Guide

for Trail Captains and Trail Workers

3rd Edition

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Contents

Introduction

This guide is aimed at providing basic knowledge of trail maintenance on the Bruce Trail to Trail Captains and Trail Workers.

It also explains what the Bruce Trail should look like, how to keep it that way, and what to watch out for when doing Trail inspections.

The information contained herein comes from the "Guide for Trail Workers", other publications, several very experienced club Trail Workers, Trail Auditors and my own experience as a trail builder, Trail Captain, and BTC Trail Director.

All illustrations are grouped together starting on page 23.

Trail Directors and work party leaders will find more comprehensive information, including that pertaining to Trail construction, in the "Guide for Trail Workers". This guide can be found on the BTC website at the following address.

brucetrail.org/pages/volunteer/training-resources

In this third printing we have updated the Guide to reflect new ideas, to correct errors, and to fill in gaps where they existed.

I would also like to express my appreciation to some of our predecessors, who contributed greatly to earlier editions of this Guide: Ian Reid, Chuck Grant, Chris Walker, and Eric Best. We build upon the foundation that they created.

The Bruce Trail has been much improved over the last 10 years, mainly due to the hard work and dedication of our Trail Captains, Trail Workers and Trail Auditors.

Dave Moule

Trail Inspections

A thorough inspection of every trail section must be conducted at least 2 times per year, and a Trail Status Report submitted 2 times per year, as required by the Bruce Trail Conservancy (BTC). The Trail Status Report form will be made available to all Trail Captains by the club Trail Director.

These reports are extremely valuable from a risk management point of view. Evidence of inspection on the Trail goes a long way towards defending us in a possible lawsuit as a result of an accident on the Trail. At the same time these reports are a very useful means of improving our Trail.

Unauthorized use of the Trail by mountain bikers, ATVs etc (unless permitted by the landowner) should also be reported. This is very important from a legal point of view as well.

In order to do the job of Trail Captain properly, additional visits may have to be made, depending on the amount of work required to keep your section in good condition.

And don't forget to bring a garbage bag for picking up litter on the Trail!

Trail Audit

Once every 5 years the BTC conducts an audit of your section of the Trail. Your Trail Director will be notified well in advance of such an audit. While it is important to keep your trail section in good condition, and compliant with BTC standards at all times, this is especially true prior to the audit taking place. That will greatly simplify the task of the auditor, who is also an unpaid volunteer.

Tools

You may already be familiar with the tools you need; if not, your local Club will soon familiarize you with them. The Appendix contains a basic list of tools you may require, depending on the type of Trail section you are maintaining.

One tool that needs to be mentioned specifically is the chainsaw. You may have one or you may have access to one. You are not permitted to use a chainsaw on the Bruce Trail or on BTC-Managed land unless you have passed a BTC-approved chainsaw course and are accompanied by at least ONE other person.

If you are a novice, one of those persons must be an experienced chainsaw operator. You must wear the prescribed safety gear.

Some Clubs may have additional safety rules; please be sure to abide by them.

The BTC has a power tools policy. Please obtain and read this, and sign the form acknowledging that you have read it, before using any power tools on the Trail.

Trail Maintenance

Maintaining a Trail means making any corrections necessary to bring the Trail up to Bruce Trail standard, and then to maintain that standard.

Trail Corridor

The Trail corridor (area free of vegetation) is 1.5 m (5') wide and 2.5 m (8') high (Figure 1).

The actual treadway - which could be bare soil or bare rock, or grass cut short - should be at least 0.6 m (2') wide, and it should be kept clear of obstructions at all times.

The rest of the 1.5 m (5') width should be cut back to about 15 cm (6") or less (ankle height).

Summer Growth

Fast growing weeds and shrubs, such as Burdock, Wild Raspberry, and Wild Rose, should be dug out, root and all, or at least cut back down to the root. This will make maintenance that much easier.

If there is poison ivy that has become a menace to hikers, discuss with your Trail Director what action should be taken. Herbicides must not be used by trail workers.

Intruding tree branches should be cut right back to the main trunk, leaving a "collar" around the base of the branch. Don't leave any "spears that protrude"; they can cause injury to the hiker.

Most important of all, start cutting back on your summer growth early, no later than the end of June before it becomes unmanageable (if it is a problem on your Trail section).

Large, sunny, grassy sections of the Trail may have to be cut back with a large wheeled lawnmower, or a wheeled weed cutter. This might require a small work party.

Fast growing vegetation also has the nasty habit of obscuring blazes and signs. Some rigorous precautionary cutting will eliminate the need for constantly having to cut back vegetation to ensure visibility of signs and blazes.

Tree Problems

The Trail is not only threatened by returning vegetation. There are windfalls (sometimes called blowdowns; trees brought down by wind) which could sometimes block the entire Trail. In any event, if the windfall or any other obstruction across the Trail is higher than 20cm (8") it should be removed. More often than not, you will require some assistance with that.

To reduce the occurrence of windfalls, you may want to take an inventory of potential windfalls - old dead trees standing beside the Trail which are likely to fall across the Trail some day - and ask for a chainsaw crew to take them down.

Live tree branches or tree sections which are partly broken off and are dangling above the Trail are a serious hazard and should be dealt with expeditiously, by a work party or a chain saw crew.

Then there are the small protruding tree stumps, difficult to see and a real hazard for the hiker. They must be removed, preferably by digging them out. Woody vegetation within the treadway should be cut off as close as possible to the ground surface, so that hikers will not trip on the stubs.

Wet Spots

Wet spots and wet sections can be found along the Trail. Frequent use will often "hollow out the treadway", making it a collector of water and mud. This may require building up the Trail by digging a trench beside it and depositing the dug out material on the Trail (when dry), (Figure 2).

Wet spots (as opposed to wet sections) can often be drained by digging a trench to lower ground, if there is lower ground.

Dense clay soils become slippery when wet, no matter how much you drain them. One solution that used to be suggested is to spread wood chips over the soil. This is not as popular as it once was. While wood chips may help for a short time, they will decompose and sink into the muddy soil, so their benefit will be temporary. They also have the unintended result of retaining moisture in the soil. Wood chips can be made more effective if they are placed over a layer of "corduroy" (cross-ways wooden sticks), or if a filter fabric is placed under the chips. The transporting and placement of wood chips is labour-intensive, and will probably be beyond the capability of an individual trail captain. A work party may be required.

A better, longer-term solution is to place a hard surface, such as gravel, quarry screenings, or recycled asphalt millings over the clay soil. Landscape fabric should be laid down first, so that the new aggregate does not sink into

the muck. This method is expensive and labour-intensive, so it will probably require a work party. Solutions such as this should be discussed with your Trail Director before being implemented.

Some wet spots and shallow creek crossings can be dealt with by installing stepping stones. Make sure they are well dug in and solid when stepped on.

Most of these projects, unless they are fairly small, require the assistance of a work party - don't hesitate to ask for one. The Trail does not have to be wet and muddy - it is up to you to draw attention to it.

Water running down sloping trails is a source of erosion. The treatment may be the same as above, except that water-bars may be needed (Figure 3). For Trail Captains, it is important that they try to prevent the treadway from becoming "dished", making it into a trough for running water. Ideally, the treadway surface should be flat, with a slight slope to one side so that water drains off the trail, rather than flowing down it. Trail sections on sidehills should be drained to the downhill side.

Another solution would be to move the Trail to the side on higher ground and let the old Trail be the water carrier, without widening the Trail/trench profile too much.

If all else fails, a boardwalk may be required.

Maintenance of Structures

In some locations landowners may have restrictions on work being done on structures. Check with your Club Trail Director or the landowner before starting work.

All BTC structures except side-logs and water-bars, must be identified with an ID tag (available from the BTC). They should be attached to the Niagara side of the structure, on the right hand side when facing Tobermory.

For side trails the location is on the km 0.0 side of the structure, also on the right hand side.

If it is not possible to attach the ID tag to the structure, then fasten it to a tree or a short post . Most of the Clubs will have a specific person or crew assigned to the installation of the number tags.

Trail Captains need only to ensure that the tag is still in place, and to make use of the ID number when reporting problems on the Trail.

Structures you may encounter on the Trail are:

- **Stiles and Dodgeways**
- **Bridges and Boardwalks**
- **Ladders and Stairs**
- **Steps**
- **Hand-holds**
- **Side-logging**
- **Water-bars**
- **Benches**
- **Non-BTC Structures**

Stiles and Dodgeways

A stile is a small ladder that enables a hiker to cross over a fence without damaging it.

What to look for:

- Missing cross braces (needed for stability), and angle braces.
- Wobbly (due to inadequate anchoring).
- "Listing" to the left or to the right - requires leveling of the stile and anchoring.
- Inadequate handholds - they should be a minimum of 2 feet long and there should be 4 of them.
- Missing platforms - they should be installed.

Protruding fasteners (nails or screws) – The increased use of icers by hikers in recent years has led in some places to the wearing down of the wooden surface of the steps or top platform of the stile. Nails or screws sometimes become exposed, and may need to be removed and/or replaced.

Areas of decay – wood that is beginning to rot should be replaced.
Distance between rungs should not exceed 12".

A dodgeway is a deliberately-built break in a fence, intended to allow hikers to pass through, but preventing the passage of horses or bicycles. Ensure that the dodgeway is solid, stable and well-anchored, and that there are no protruding fasteners to catch on a hiker's clothing.

Bridges and boardwalks

What to look for:

- Solid supports on each end (cribbing or sleepers) which are not undercut by erosion from the creek below.
- Reasonably level - if not level, the sagging end or corner should be repositioned.
- Handrails - one handrail is required for bridges more than 1 m above the creek bed; two handrails are required for 2 m above.
- Look for decay - if it's bad, then replace; if it's just starting, preservative can be used.
- Toe rails are recommended for bridges without handrails. These are usually 2" x 2" or 2"x 4" pressure treated boards nailed or screwed to the edge of the deck.
- Min. width 32". Under no circumstances should the width be less than 30" (24" for boardwalks). In high traffic areas, a width of up to 48 inches is preferred.
- Boardwalks are generally built through wet areas, where vegetation also grows vigorously. It will extend the life of the boardwalk if adjacent vegetation is cut back, away from the boardwalk edge, to allow sunshine and air circulation, so that the boardwalk is not constantly wet.

Ladders and Stairs

What to look for:

- Must be solid, stable, and well anchored.
- Handrails, if there are any, should be solid and withstand sideways pressure. Look for signs of decay.

Steps

What to look for:

- Log steps are held in place by stakes or angle iron, and the stakes or angle iron must be nailed to the logs, and must therefore have nail holes.
- Decayed and washed out logs usually leave the stakes in place as a real hazard for hikers. Remove them as soon as possible and/or replace the log step.
- Stone steps sometimes require repositioning of some loose stones.
- Make sure stakes do not stick out above the level of steps - in the case of log steps, not above the thickest part.

- Recommended height of steps is 8". Higher steps may be difficult for some hikers, while lower steps would reduce the length of the horizontal part of the step, a possible inconvenience. Steps much higher than 8" should be reduced if possible.
- Flights of stairs or steps consisting of 3 or more steps should have a structure ID plate.

Hand-holds

- Hand holds, if any, should be sturdy and should be able to withstand considerable sideways pressure. Cables or chains are generally not recommended, except where the slope is extremely steep, and there is a perceived danger of hikers losing their balance and falling. Attachments must be inspected regularly and carefully to ensure they remain sturdy. Installation and maintenance of cables or chains is generally a job for a specialist crew.
- Ropes should NEVER be used as a hand-hold, as they are prone to deteriorate over time.

Side-logging

What to look for:

- Erosion may wash away the soil below the side-log and make it ineffective. The open space can be filled with rocks and/or other logs to stop the erosion.
- Side-logs are usually subject to more decay than any other structure, and need to be replaced as required. Watch out for protruding stakes! They can be just as dangerous as stakes on a step.
- Sometimes, side-logs that were installed in the original construction of a trail will become redundant, or unnecessary. If the treadway is located on a firm, stable "bench" cut into the slope, and the side-log is not providing structural support, then it may be desirable to remove the side-log, since it may be causing the retention of water on the treadway.
- Side-logs do not have a structure ID.

Water-bars

- A water-bar is a step-like structure, placed at an angle across the trail, intended to divert flowing water off the treadway. Trail captains should ensure that the water-bar is solid, and well-anchored. Like steps, the

supporting steel stakes should not be allowed to extend above the top of the wood. The drainage path for water should be kept clear so that water can flow freely off the treadway.

- Water-bars do not have a structure ID.

Benches

There are many different styles of bench along the Trail. Whatever the design of the bench is, it must be kept in good condition, so that hikers can safely sit on the bench without fear of collapse.

Non-BTC Structures

In some locations like Conservation Areas, Provincial Parks or the National Park, there may be structures that have been installed by the park management. In most cases, the responsibility for maintenance will rest with the park. Nevertheless it is important that the maintenance responsibility is clearly understood by both parties.

If a trail captain sees a deficiency that needs to be addressed, they should ensure that the proper authority is notified.

Blazing

A blaze is a marker placed along a trail, to guide hikers and ensure they don't lose their way.

The BTC has chosen the same style of blaze as the Appalachian Trail: a painted rectangle 5 cm wide by 15 cm high (2"X6") The Main Trail is marked with white blazes; side trails are marked with blue.
The rectangle, with its straight sides and square corners, was selected because it will stand out with good contrast among the random shapes generally found in a forest.

Where the Trail proceeds more or less in a straight-ahead direction, then single blazes are used. If there is a distinct change of direction, or at an intersection where there is more than one choice of route to follow, then a turn blaze should be used. A turn blaze is formed by painting 2 blazes, one above the other, with a 5 cm (2") vertical space between them, and with the upper blaze offset by 5 cm in the direction of the turn. (see Fig. 4) After a turn blaze, then a single blaze known as a confirmation blaze should be visible immediately, on the new direction of travel, to confirm that the hiker has turned in the correct direction.

Spacing between blazes

The general guideline for spacing between blazes is that one blaze should always be visible ahead of the hiker when walking the Trail. In other words, as the hiker walks past one blaze, the next blaze should come into view, either immediately, or within a couple of strides. If the treadway is relatively straight, very well established and there is no other way to go except along the Trail, then the spacing might be increased a little. Conversely, if the treadway is difficult to distinguish (such as when it's on solid bedrock), then slightly closer spacing may be warranted.

Trail Captains should try to have just enough blazes to give hikers good guidance, without cluttering the landscape unnecessarily with blazes. It must be remembered that conditions on the Trail change with the seasons: a well established treadway might become totally hidden by fallen leaves or snow, so that the hiker has only the blazes to guide him/her. In mid-summer, foliage growth might obscure some blazes. The trail user needs to have clear guidance from blazes along the Trail in all seasons.

In addition to the "normal" spacing, a blaze should always be placed immediately beyond any intersection with another trail or path, in order to confirm the direction of the Bruce Trail. At a junction between the main Trail and a side trail, a blue turn blaze should be placed on the main Trail, just before the junction, in each direction.

Where to place blazes

Blazes are placed on solid objects close to the edge of the Trail. Generally, this means trees, fence posts, or utility poles. The object where the blaze is to be painted must be large enough to hold the blaze; it's not possible to paint a proper 5cm wide blaze on a sapling that is only 2 cm in diameter. Similarly, a turn blaze requires a space that is 15 cm wide by 40cm high. If no suitable object exists at a location where a blaze is needed, then it may be necessary to install a post to hold the blaze. This could be a steel T post with a board attached to the top, or larger dimension wooden post where the blaze can be painted. Typical blaze posts may be: cedar fence post (minimum 5" diameter), pressure treated 4X4 or pressure treated 6X6. (Fig. 6)

Generally, avoid painting blazes on rocks, although occasionally this may be your only choice.

The height of a blaze should be at "eye height", which is considered to be 1.5 to 1.7 metres above ground.

Where the Trail follows a travelled road, it is often convenient to put blazes on utility poles; spacing between these poles will vary, but generally there should be a blaze on each pole, so that hikers have reassurance that they have not missed a turn-off. Also, on roads, it is preferred to paint the blazes on the left side of the road, to encourage hikers to walk facing oncoming traffic. This means, in an ideal situation that there would be blazes along both sides of the road. In practice however, this may not be practical.

Blaze Dimensions

As stated above, a blaze should be 5cm by 15 cm (2"X6") when it is painted. However, it may not remain that size. A blaze painted on a living tree will likely get wider as the tree grows, and growth cracks will appear within the blaze. This is a signal that it is time to repaint the blaze and restore it to its original 5 cm width. Excess paint on the edges should be scraped off with the paint scraper. The scraper can also be used to trim your blaze, to achieve nice straight edges and square corners.

Painting your Blaze

Blazes should be painted with a 1.5" wide brush, using exterior acrylic latex paint. The correct colour of "side trail blue" is shown on page 30 at the end of this Guide.

If the surface to be painted is rough, then it should be scraped with a paint scraper. Applying the paint to a smoother surface will produce a better-looking blaze that will last longer. Avoid blazing on dead trees, which are likely to fall over, and try not to blaze on trees of the poplar family, whose bark contains a substance that makes the paint peel off prematurely.

Many Trail Captains paint their blazes freehand with very good results. Others prefer to use a template made of metal or plastic, where they paint within a 5 cm X 15 cm hole. Some like to trace a 5 X 15 outline on the surface with magic marker and then paint within the lines. Occasionally, masking tape is used to outline the blaze, although this is very time consuming, and difficult to do on rough-barked trees.

It doesn't matter which method you use, as long as you end up with a neat, rectangular blaze that is approximately 5 cm by 15 cm. The main requirement is that you be willing to take the time to do the job right.

The Turn Blaze

Painting a good turn blaze that complies with BTC standards seems to be one of the most difficult tasks that a Trail Worker has to do. If you pay attention to the dimensions and configuration shown in Figure 4, it should not be difficult to paint a perfect turn blaze.

Mistakes frequently seen in the painting of turn blazes include the following:

- Trying to paint on too narrow a surface; the minimum width required is 12.5 cm (5 inches) although 15 cm (6") is better
- Trying to paint on too short a space; the minimum height required is 40 cm (16")
- Painting one blaze directly above the other; the upper blaze must be offset by 5 cm in the direction of the turn
- Painting blazes side by side rather than one above the other
- Having too much, or too little vertical space between the 2 blazes. The correct space is 5 cm (2")

All of these should be avoided, and if you find non-compliant turn blazes on your trail section, they should be corrected. The BTC is trying to achieve a

single, consistent standard of blazing and trail maintenance along the entire length of the trail.

Tuxedo Blazes

When the surface to be painted is very light in colour, so that a white blaze will not show up with much contrast, a Tuxedo blaze can be used. This means painting an outline about 1 or 2 cm wide, around the blaze, using black paint. While this is more time-consuming than just painting a simple blaze, the result is far superior. If the white paint is applied first, then the black outline paint can be used to "trim" the blaze to the correct size and create nice straight edges and square corners.

The T Blaze

The final type of blaze that you may have to paint is the T blaze. This is used to indicate the end of a side trail, whether that occurs at a dead end, or at a junction with another trail. This is made by painting one standard vertical blaze and then placing a second horizontal blaze above it, with a 5 cm space between. (Fig. 4)

Weather Considerations

Blaze painting should only be done when the weather is suitable for painting. Don't try to paint in freezing weather; your paint can will probably indicate a temperature below which you should not paint.

Do not attempt to paint when trees and other surfaces are wet from dew or previous rainfall.

Do not paint when it is raining, or when rain appears to be imminent. This will only result in your paint making a runny mess on the trees, and will probably require you to do the entire job over again.

Repainting

Blazes do not last forever. Even a perfectly painted blaze will eventually begin to weather, fade, crack, or peel. When this begins to happen, it is time to repaint the blazes. This is also an opportunity to correct the size of blazes that have grown wider than 5 cm. At the same time, you should assess whether the locations of the old blazes are still the best ones under today's conditions. Sometimes, the loss of old trees, or the growth of new trees will make it desirable to remove some old blazes, or add some new ones. Repainting time is the time to do this.

Alternative Blaze Types

Blazes made from pre-painted aluminum, vinyl, or wood have been tried with varying degrees of success. While these materials can result in a nice, rectangular blaze with perfect dimensions, they also have some disadvantages:

- They are not suitable for installation on live trees
- They are more expensive than painted blazes
- They are probably easier for vandals to remove than a painted blaze

These alternative blaze types are most appropriate on utility poles, fence posts, or blaze posts. Using an aluminum blaze on utility poles along a road section, may reduce the amount of time a trail worker must spend in the dangerous, road-side environment.

There are also a few exceptional situations where they are appropriate and very useful:

- Where a temporary detour of the trail must be marked, and then "unmarked" within a fairly short time (such as a winter seasonal detour, or construction detour)
- Where a new trail route is being opened, and the weather is not suitable for painting
- Where a very important blaze has been lost due to a tree being blown down, and a new blaze needs to be installed when weather is not suitable for painting.

These alternative blazes have a place, but they should not be used for routine marking of the trail under normal conditions. The painted blaze is still the Bruce Trail standard.

Signage

Diamond signs

Diamonds are intended to accentuate single blazes (never turn-blazes), and to identify the Trail as the Bruce Trail. White diamonds for the main Trail and blue diamonds for side trails.

Where a side trail intersects the main trail, there should be a white diamond on the main trail on either side of the junction. Similarly, there should be a blue diamond (above a blue blaze) on the side trail, immediately after the beginning of the side trail.

They are mounted on a 0.5"x 6"x 6" pressure treated plywood backing.

Diamonds should always be installed with the Bruce Trail arrow pointing upwards. They are placed 2" above confirmation blazes at intersections that are not marked by signs (Figure 5).

Other Locations

- To accentuate blazes which are difficult to see, due to distance, poor lighting etc. For example at either end of a field crossing.
- There are locations where 2 side trails intersect each other. In this case, a blue diamond sign should be installed on each leg of the intersection.

How to Install Diamonds

- Drill 2 holes, one at the top and one at the bottom of the mounted diamond, to allow for 2.5" galvanized Ardox or smooth nails. Leave at least 0.75" space for the nail head above the diamond surface, to give the tree room to grow. Washers under the nailheads will reduce the possibility of a pull through, and of vandalism. Screws may also be used if that is your preference.
- Roofing nails (1.5"- 2" smooth, hot dip galvanized) are another option.

How NOT to use diamonds

Diamonds should never be placed:

- On the Trail in a random manner in locations other than those specified in the above.
- By themselves (without the single blaze below).
- Above a turn-blaze.
- With the arrow not pointing straight up.
- Without a wooden backing.
- Below, rather than above a blaze.

Improperly placed diamonds, where they exist on the Trail, should be removed immediately as they are a form of sign pollution and could also cause confusion for the hiker.

Signage

The most commonly used signs are main Bruce Trail access signs and side trail signs.

Location

Main Trail access signs at road crossings should be located close enough to the road that they are clearly visible by someone driving by. At the end of a travelled road, where the road turns into a Trail, there should also be an access sign and it should be clearly visible (Figure 5). If the land where the trail enters is BTC managed land, then a BTC managed land sign may replace the Access sign.

Signs that are not clearly visible should be moved to a more visible location, even if it involves a signpost.

Side Trail signs should also be clearly visible, usually from the main Trail, where all side trails originate.

Mounting should be 6 feet high or higher if possible, to discourage vandalism.

"Follow the Blazes" signs should be mounted at major access points, preferably below the Access sign.

An access point is classed as "major" if parking is available, and/or it is frequently used.

Other signs can be installed as required.

Beware of sign pollution, and remove signs that are no longer required or are redundant.

As a general rule, corroded and otherwise deteriorating signs should be replaced with new ones. We want to reflect the image of a first class Trail and no less.

Old, outdated signs, such as those using the words "Bruce Trail Association", should be considered for replacement, at the discretion of the club Trail Director.

Fasteners

- The appearance of signs is important. We must therefore use fasteners with maximum corrosion resistance.
- Use stainless steel screws for fastening of signs and diamonds to back boards. They are available from the BTC at no charge.
- Fasteners for mounting signs and diamonds to trees etc. could include hot dip galvanized nails, "duradized" deck screws, H.D. galvanized lag screws, etc.
- If you use galvanized fasteners, be sure to use hot dip galvanized ones, not electro plated or electro galvanized, because they don't last very long in an outdoor environment.

Some general comments on Trail Maintenance

When reviewing your inspection report, you may find the amount of items "to be done" overwhelming. Here is what you do to make it manageble:

First: Segregate all the items that require help or a workcrew. Pass this list on to your Trail Director.

Second: Prioritize the items. Those that affect safety on the Trail should come first, etc.

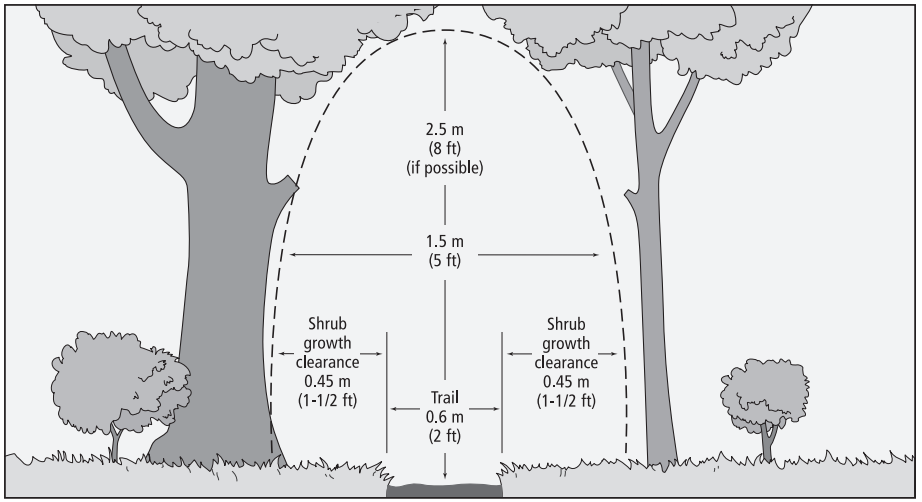
Third: Don't try to do too much at once. Work also becomes a lot easier if you do the Trail work together with someone else, and it's a lot more fun too.

In time, you can look with satisfaction upon all the improvements you have made. Then, when a hiker passes you by, while you work on the Trail and says "thank you for doing this", you know that it has all been worthwhile.

Figure 1

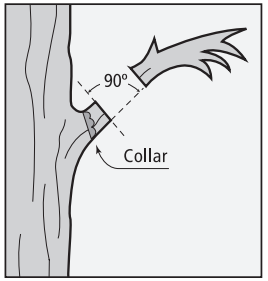
How high should you clear?

Cut as high as you can reach – up to 2.5 metres (8 feet) if possible. Some backpackers need well over 2 metres clearance. Remember that as branches grow longer they will droop lower, and rain and snow will pull them down still further.



Shrubs and trees that just clear the head will often obscure the vision of someone travelling downhill. On the other hand, try not to let too much sunlight into the trail, as this just encourages more undergrowth. If possible, work toward the development of a continuous canopy arching over the trail, so there is plenty of clearance for the hiker, but not too much penetration of sunlight.

How to deal with trees?



Cut off obstructing branches close to the main bough or trunk, but leave the "collar" around the base of the branch so that the tree can heal the wound. Cut branches at right angles – acute angle cuts leave sharp points. In the case of very small trees and seedlings, it is probably better to remove them completely, since they would only grow and become a problem in the future. Cut them at or just below ground level to minimize tripping hazards and sucker growth, but leave the roots to stabilize the soil.

Figure 2

Side-logging

Where the trail crosses a slope diagonally, it is often a good idea to support the path on the downhill side, by means of a series of side-logs. These delineate the path, help to keep the trail surface relatively flat, and prevent the treadway from collapsing or being washed down the hill. It is sometimes possible to find suitable dead trees locally to do this work. Cedar will last longer than hardwoods. Cedar logs should have their bark peeled off; this will make them last longer. The logs must be supported in place by trees, very large rocks, or some type of stake. A 60 cm (24 inch) long drilled-one-end steel angle-iron, or a fence post T-bar will do a good job. Ideally, the packed earth of the treadway will be slightly higher than the side-log, with a gentle slope toward the log, so that water will run off the trail, rather than along it. To prevent washouts of the path, you may also consider a shallow ditch along the uphill side of the treadway, with occasional water-bars to outlet the water in a controlled manner.

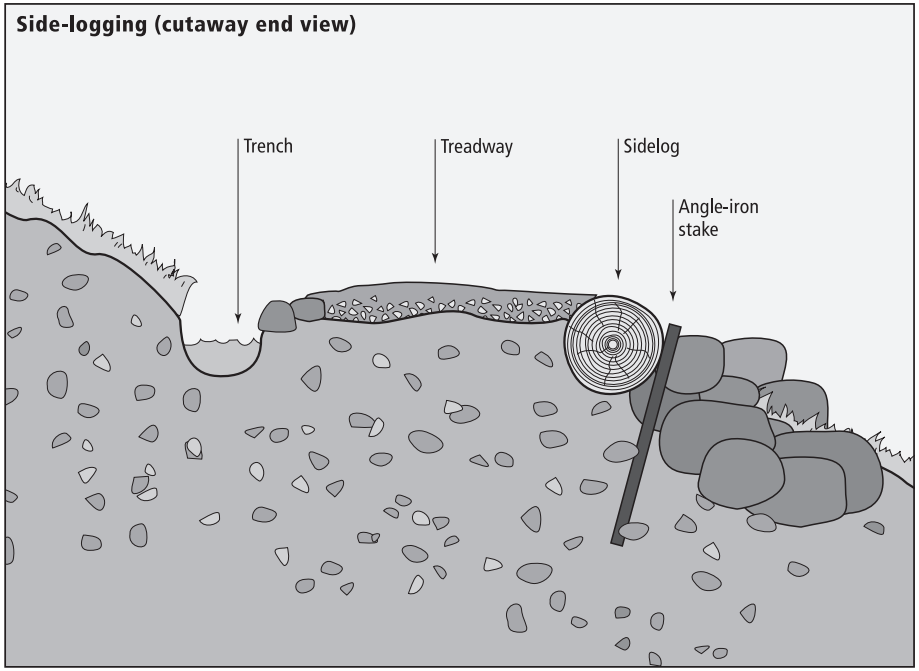
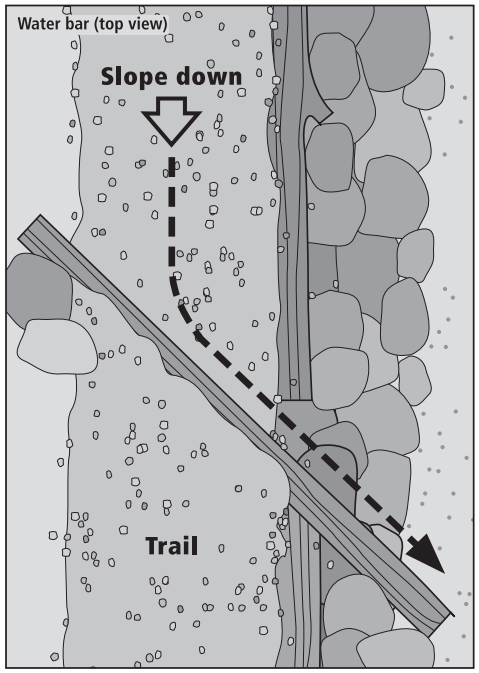


Figure 3

A water-bar usually consists of a log, cedar is best, laid across the trail at an angle of about 45 degrees from the direction of travel. The log should be about 15 cm (6inches) in diameter, stripped of its bark, and must be long enough to fully span the width of the trail on the angle, intercept all water flowing down the path, and carry it completely off the trail. The log must be seated (dug in) to a depth of about half its diameter, and must be held firmly in place with stakes, preferably located outside the treadway proper. Trees, roots or large rocks may also be used to hold the water-bar in place, or if the trail is side-logged, the bar may be nailed to the side-log using large spikes.



A slight depression may be excavated across the path above the bar, and the soil can be packed along the downhill side of the log to prevent leakage. The area into which the drainage is directed must be lower than the trail, should be stable and covered with healthy vegetation, and should be located so that the water will not find its way back onto the trail further down the hill. Generally, the steeper the slope, the greater will be the need for water-bars, and the closer their spacing should be. Occasionally, a tree root or rock outcropping can be used as a natural water-bar, with only a little modification.

Note: Where a water-bar is placed at a turn on a switchback, i.e. where the hiker's direction of travel is changing, the angle of the bar may not be 45 degrees. Itwill probably be roughly parallel with the direction of the uphill portion of the trail, and will be at an acute angle to the direction of the downhill leg of the trail.

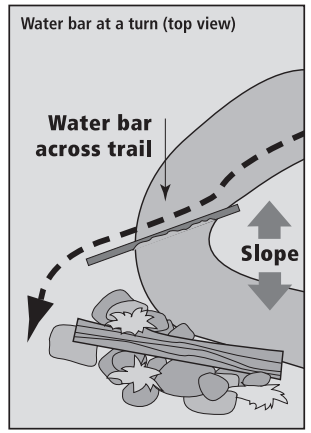
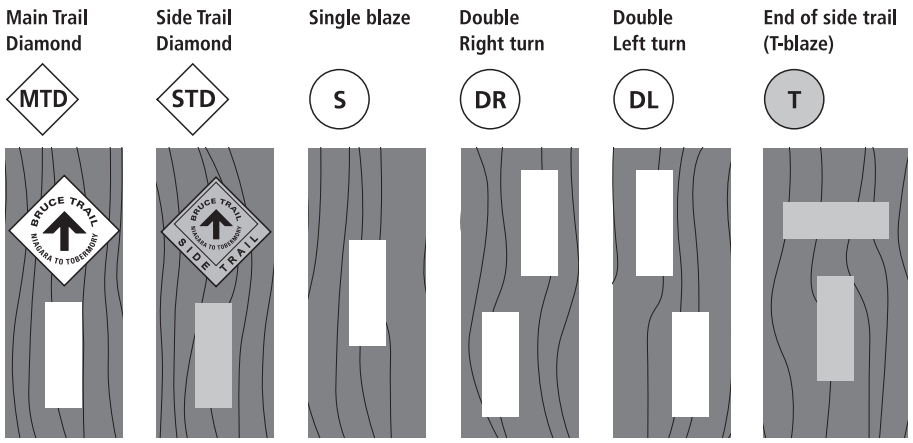
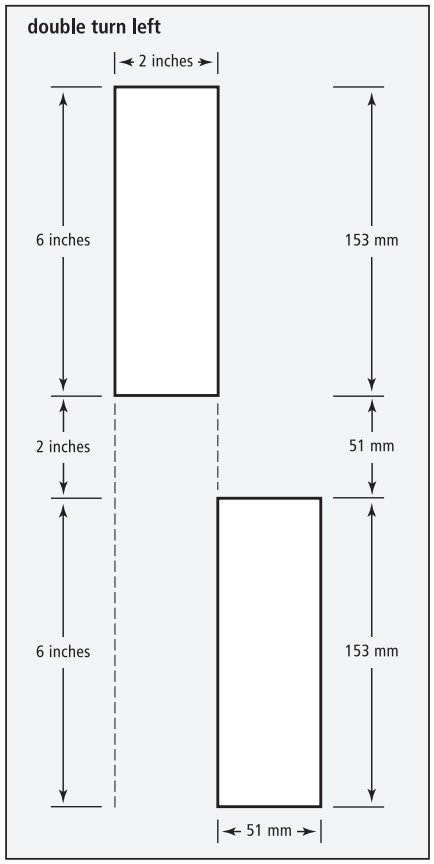


Figure 4

The configurations below apply to all Trail blazes

Blaze colours: White for the main trail, Light blue for side trails





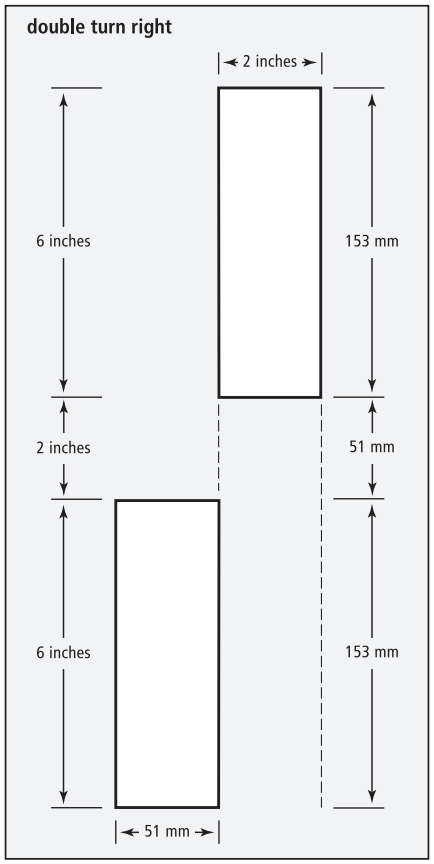
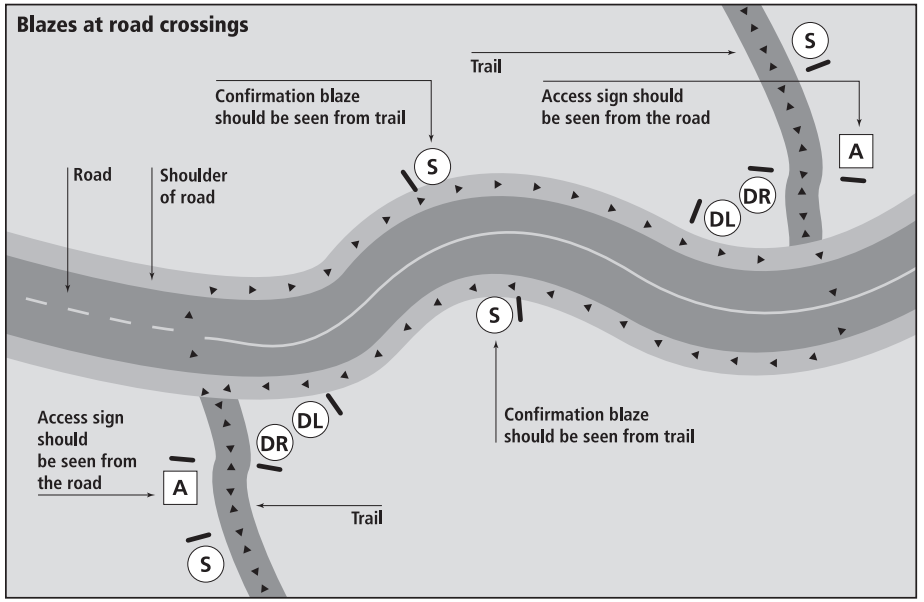


Figure 5



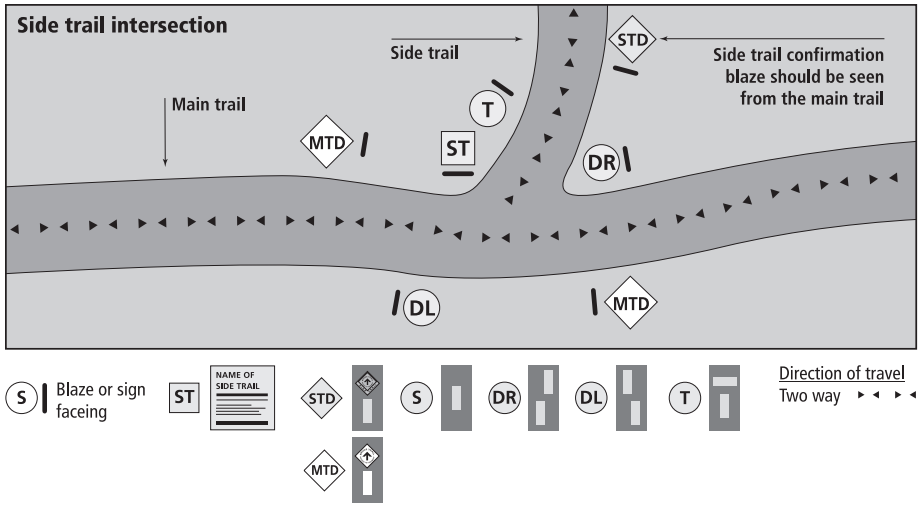


Figure 6

Where to blaze

Blazes are normally put on trees, fence posts or utility poles. Blazes on fence posts should not run all the way to the top of the post, but should stop 2 or 3 cm short of the top, for better visibility. If suitable trees and posts are absent where directions are crucial, the trail worker should be prepared to erect a suitable post on which to paint the blazes. This could be a round cedar fence post, a cedar or pressure treated 4″x 4″, or a steel post with a piece of wood, large enough to contain a blaze, attached to the top. A piece of 1″x 4″ or 2″x 4″ is large enough for a single blaze, while a piece of 1″x 6″ or 2″x 6″ is needed for painting a double (turn) blaze.

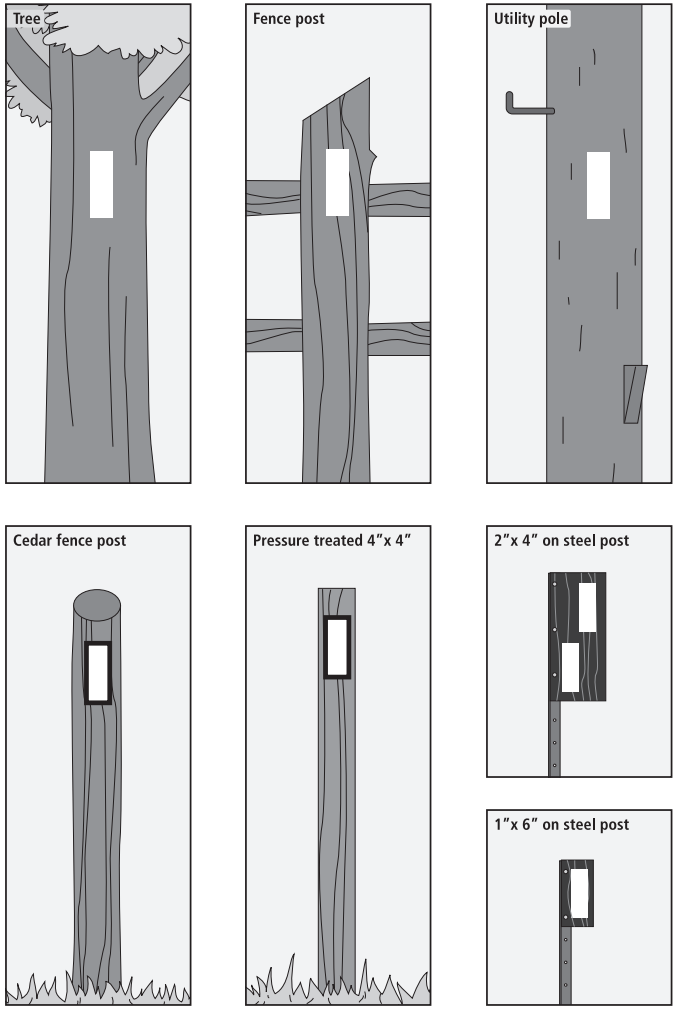


Figure 7

Example of over-blazing: There is at least one blaze too many.

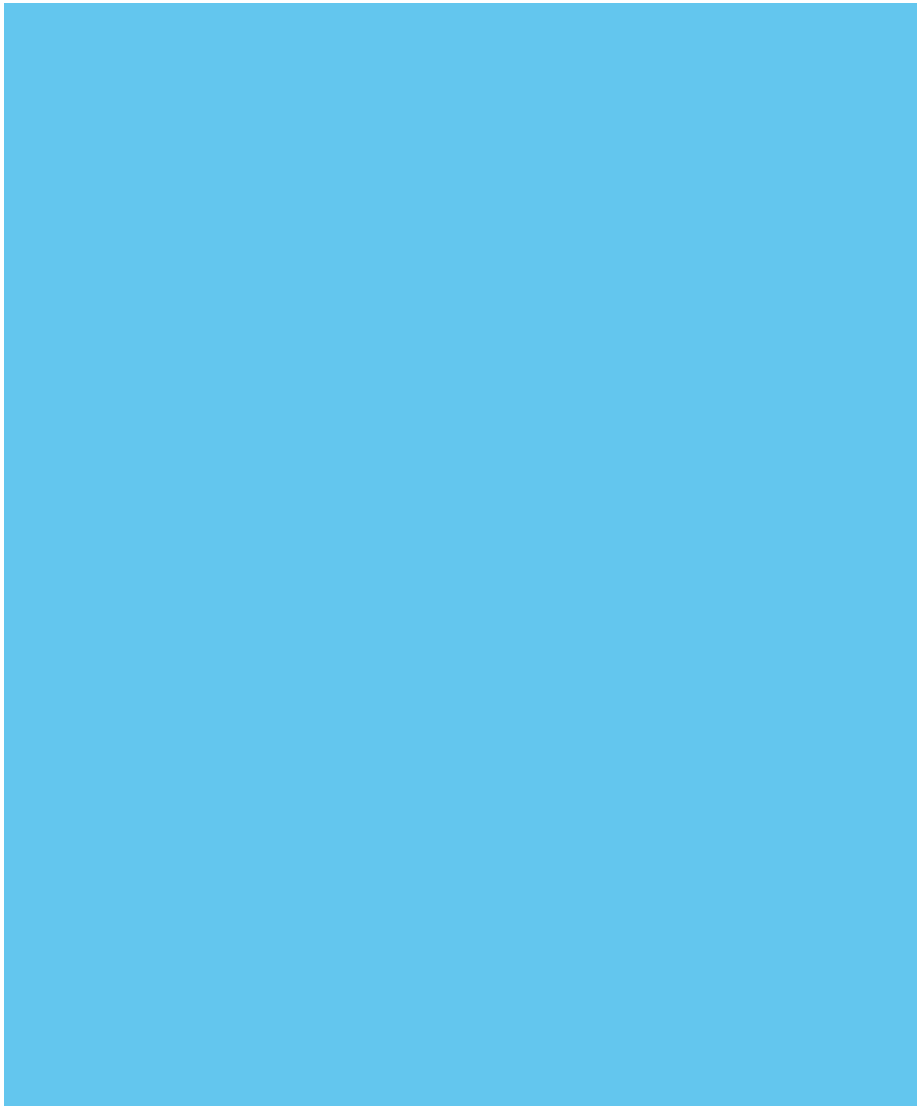
Figure 8

Example of an incorrect turn-blaze painted on a narrow surface which does not allow for the standard turn-blaze offset.

Figure 9

Side Trail blue

Below is the colour used for side trail blazing. Take this swatch with you when purchasing paint. Spread a sample of the paint on a piece of white card and let it dry to see if it matches. Keep trying until you match or come as close as possible. The type of paint you need is exterior latex, semi-gloss.



Pantone 2915 CVU

APPENDIX

Basic tools for a Trail Worker:

- Loppers (geared type preferred)
- Pruning shears or hedge clippers
- Pruning saw (folding type preferred)
- Bowsaw

Additional Tools may be required (depending on the type of Trail section to be maintained), as follows:

- Mattock (lightweight if the regular one is too heavy for you). A great tool for digging out roots or small tree stumps.
- Long handled shovel.
- Weed whacker (manual or powered).
- Sledgehammer, 4 lbs (for hammering protruding stakes)
- McLeod grub hoe

Basic kit for blazing:

- Container such as a fruit basket, open toolbox or cut-away 4-liter jug.
- White paint (in a plastic jar)
- Blue paint, if side trails are involved
- Paint brush 1.5”
- Small container of water
- Rag or paper towels
- Scraper (long handle preferred)
- Template or tracing block
- Dishwashing gloves
- Measuring tape
- Masking tape

NOTES: