

MRTA MONITORING AND MAINTENANCE STANDARDS

1. DAMAGE AND INSPECTIONS

It takes more than developing and building structures that promote access and hiking to ensure that trails last. Despite careful preparation and development that meet all stability and effectiveness criteria, trails and their components must continually be rethought, reworked and improved. Also, a trail's surrounding environment is dynamic and changes with the seasons and over time. Wood ages and rots, for example, and vegetation will always try to overrun a trail.

Trail development therefore necessarily involves having someone in charge, usually the maintenance leader, who will maintain and commit to providing a trail that is safe and of quality as the months and years go by. To neglect or simply disregard maintenance is to accept that the trail will be used less and less over time and eventually be abandoned, perhaps even forgotten.

The main point of monitoring a trail is to ensure that it meets the objectives that led to its development in an environment that is safe for trail users. Regular inspections allow the identification and even anticipation of a trail's problems and weaknesses and enable swift corrective action to be taken. In addition to addressing real and potential problems, monitoring and maintenance also allow for adjustments to be made to developments and structures based on changes in trail users' needs, traffic, feedback and the host environment. To guide and assist Trail groups in their work, a monitoring and maintenance record template has been included with this document.

1.1 Causes of Degradation and Damage

1.1.1 Natural Causes

Nature will always try to retake its place, so it is important to work with it, not against it (by diverting bodies of water, for example). The same can be said of vegetation, which will inevitably try to overrun the trail, mainly in areas that receive constant sunlight and where soil is fertile.

The main natural cause of trail degradation is water, without question. Whether it is runoff from rain or melting snow or overflow from a body of water, water floods, erodes, digs and carries away soil.

Wind and lightning can also bring down branches and occasionally even uproot trees. On rare occasions, lightning can start fires.

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1.1.2 Human Causes

A trail's use is generally a function of the degree of interest that the trail generates among trail users and the trail's accessibility. Repeated foot traffic can lead to trail erosion and expose roots and rocks. Other causes of degradation include negligence (e.g., the creation of shortcuts, use by cyclists or horse riders, litter, etc.), vandalism (deliberate acts of destruction of things like trees or artificial structures) and lack of awareness (negative impacts of actions that often start with a good intention, such as tearing off a branch that is blocking the trail).

It is also important to add that no trail is perfect. For example, trail users will broaden the tread way to avoid pools of water and mud. Rockslides on very steep slopes or large groups will limit hiking and push trail users off the original path. An exceptional or sudden rise in water will overcome foot and other bridges.

2. WHEN TO INSPECT

Inspections should be conducted regularly, which could be monthly or at strategic times throughout the year. Monthly inspections are ideal but require time and manpower, two things that are often difficult for volunteers to find. At minimum, a trail condition survey should be conducted once a year (in the spring, prior to high use periods in the summer, or in the fall, after heavy usage).

The following is the minimum, practical inspection schedule recommended for maintaining a hiking trail:

Spring

The first trail inspection should be carried out as soon as the snow melts. It is at this time of year that it is easiest to see damage caused by winter and areas where water is accumulating.

Summer

Once vegetation has reached its maximum growth, it is important to check the location and visibility of signposts, information boards and the trail's overall condition, and to consider pruning if needed. The areas showing the most erosion or likelihood of erosion can usually be spotted.

Following Exceptional Weather

Heavy rains or strong winds can sometimes damage trails and structures. Inspections are recommended following a storm or extended period of bad weather. The maintenance leader will be able to assess the damage and determine any work (e.g., repair of destroyed or broken structures, removal of fallen trees) that may need to be done.

In Response to Feedback

When trail users or other users provide feedback on structural or safety issues related to the trail, their comments should be followed up on quickly and the necessary corrective measures taken.

3 WHAT TO INSPECT

As indicated earlier, certain aspects of trails need to be checked regularly. During the inspection, it is important to write down the location of the feature being checked (whether it is a structure or design issue), the nature of the problem, and the maintenance or corrective measures needed (including material, labour and time needs). The degree of urgency of the work (high, medium and low priority) can also be noted. The aspects that need to be looked at include everything within the clearance area (tread way, signage, structures), as well as non-artificial aspects, such as drainage and slope. The inspection must also help to determine whether there is an impact on fragile natural (habitats, wildlife and plant life) or human environments.

3.1 Physical Surroundings

3.1.1 Clearance Area

The clearance area must always be unobstructed. Consequently, branches, trees, roots and other obstructions need to be removed on a regular basis. This is even more important when dead trees or dangerous branches could jeopardize the safety of trail users. Note that delaying the important task of pruning runs the risk of creating more work unnecessarily as the summer progresses and vegetation grows.

The tread way must be relatively flat and permit adequate drainage. A slight lateral incline promotes runoff of water. Ideally, this work will be done as soon as the trail shows signs of degradation or in the fall, so it can settle during the winter. Where necessary, material can be added to heavily trodden areas or areas where there is an accumulation of water.

3.1.2 Drainage and Damage Caused by Erosion

Ditches and water bars should be cleared of any debris that hampers runoff. If clearing and cleaning the ditches are insufficient, other drainage methods will need to be considered (e.g., placing stepping stones or deviating the trail).

Water must be kept from accumulating or using the trail as a passageway. It is important to act quickly at the first signs of erosion or where water is already causing damage, such as along a body of water. Shore maintenance and refilling are often necessary and even essential to preserve fragile systems, such as fish habitat.

3.1.3 Slopes

It is important to monitor and inspect the trail segments most prone to deterioration through erosion, like steep slopes.

3.1.4 Structures

The stability and condition of structures (culverts, benches, etc.) must be checked regularly. They must be replaced or adjusted, and screws tightened, as needed. In short, proper inspection will prevent their deterioration. Trail user safety needs to be the constant priority. For instance, stairs or culverts that are rotten, slippery or have protruding nails should be tended to immediately.

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3.1.5 Bodies of Water

Bodies of water are unquestionably the animal habitats that are most fragile and vulnerable to sediment deposits and substandard or missing crossing structures. Shores must be kept stable and safe.

3.2 Biological Environment

3.2.1 Habitats and Ecosystems

Natural habitats that are vulnerable to the presence of humans should be preserved and even handled with special care. To that effect, the creation of unauthorized shortcuts and any other traffic outside trails, particularly in the vicinity of wetlands or steep slopes, should be discouraged.

3.2.2 Wildlife

For obvious reasons, trails should be developed far from fragile or dangerous wildlife habitats. When wildlife activity is detected (e.g., deeryards) or safety hazards are reported (e.g., a bear's den), Trail groups should address the situation promptly.

3.2.3 Plant Life

All necessary steps must be taken to avoid foot traffic alongside trails. It is also recommended that approaches to points of interest or curves be monitored so that unauthorized trails or shortcuts are not created. Proper pruning will prevent damage to vegetation.

3.3 Human Environment

3.3.1 Access and Safety

Trails must be safe to enter at all times. Access to vulnerable segments of trails should be restricted, if not temporarily prohibited, during wet periods (early spring, fall, after heavy rain), when the trail is unsafe or substandard or when there is marked deterioration. These temporary measures will help to preserve the trail and give Trail groups time to take the necessary corrective action.

3.3.2 Usage Conflicts

Care should be taken to ensure that only trail users have access to the trail. If others are using the trail, access will need to be restricted using appropriate signage or barriers.

3.3.3 Signage and Marking

Signposts and markers must be checked regularly to ensure they are sturdy, stable and effective and also to make sure they are visible by cutting down any obstructive vegetation and eliminating any other accumulated debris. The writing on signs must always be clear and visible and thus should be repainted as needed. Particular attention should also be paid to approaches to public roads.

3.3.4 Scenery and Vistas

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Scenery is much more than simply an area's visible characteristics. Its definition must be broadened to encompass the interaction between human activity and the environment, including biophysical, human, cultural and visual aspects. Scenery plays an important role in the experience of trail users. The person in charge of monitoring and maintenance must therefore ensure that the scenery is not altered by the presence of the trail and its use by trail users.

3.3.5 Services

Services must meet trail users' needs. It is better to offer fewer services than to offer services that go unused or are unsuitable. An awareness of where services are available should be made available to trail users. This information can be posted at the trailhead, included a brochure and placed on the MRTA web page.

4 IN SUMMARY

Maintaining a quality trail requires regular maintenance from the first year on. This essential work reduces the environmental impact of the trail's creation. Proper maintenance involves repairing damaged structures and developments regularly or as problems and needs arise.

After inspections, it will be necessary to set maintenance and repair priorities, with a focus on safety issues. Priority should always be given to trail user comfort and safety and protecting the environment.

To ensure that nothing is overlooked in trail monitoring and maintenance, Trail groups need to establish a monitoring program. This could take the form of a checklist describing each activity or structure, its location (distance or GPS coordinates), required frequency of inspection, annual cost of maintenance and repairs, date and person in charge of maintenance. For instance, keeping records of structures and signs (drawings with explanations) will allow for monitoring year after year. Checklists should even be included in the planning stage of a trail as they play a non-negligible role in monitoring.