

204: TRAIL CONSTRUCTION AND MAINTENANCE

Dirt, water, gravity, vegetation, and critters are what cause the need for trail work. Construction and maintenance are our methods for dealing with these impacts to the trail.

FTA Regional Representatives, Section Leaders, and Activity Leaders with trail crew leader training or experience are the primary leaders of trail construction and maintenance activities. Chapter leaders should make every effort to involve the land managers, the public, youth groups, interested stakeholders and other FTA Chapters in trail maintenance. Prior to the beginning of the hiking season, Section Leaders should contact land managers and prepare a trail maintenance work plan and tentative schedule of activities. Just prior to trail work activities, the land manager should be contacted again to ensure the work location is open and safe for trail workers.

Trail Standards

Trail standards are the same for both construction and maintenance, although construction is normally a more intense activity. Trail and blazing standards for the Florida Trail (FNST) are found in Chapters 201, 202 and 211. The trail standards outlined in Chapters 201 and 202 also apply to the Florida Trail System. Trail relocations and new infrastructure construction are to follow the coordination and approval sequence set forth in Chapter 210.

Safety

All workdays start with a Tailgate Safety Session. The safe use of tools and no injuries are *priority one!* See Chapter 208 for information on the Tailgate Safety Session.

Clothing

In addition to required Personal Protective Equipment (PPE), recommended clothing for trail workers includes sturdy shoes or boots, long sleeve shirts, and long pants. For PPE requirements see the *Trail Maintenance and Construction Safety Quick Reference Card* in Chapter 207.

Routine Trail Maintenance and Trail Construction

Clearing and Brushing (aka lopping and mowing). Plants grow fast in Florida, often closing off a trail corridor in less than a year. Brushing generally needs to be very aggressive. Mow and lop back vegetation to the clearing limits. Cut brush at ground level, even if the plant is outside the clearing limits. Never just cut off the tips of branches; it is a waste of time. Prune back brush to encourage growth away from the trail. Ideally, cut where a single stem at the base (trunk or primary stem) removes several branches.

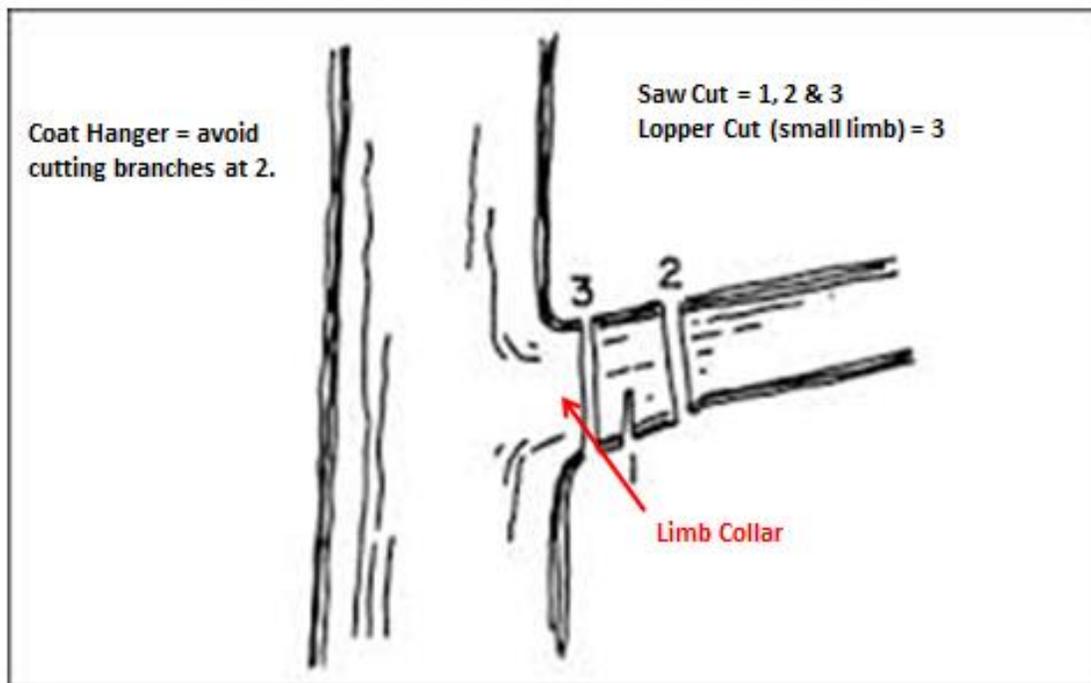
Vegetation grows back vigorously; it may be necessary to brush more often than once per year using chainsaws and/or brushcutters. Both are moderately dangerous tools and not suitable for volunteers without training. An alternative is to grub out shrubs using Pulaskis, cutter mattocks, or other grubbing tools.

All sapling stumps must be cut as flush as practical with the ground to prevent tripping hazards and avoid interference with mowers. Within the trail tread, completely pulling up seedlings and small saplings to remove their roots is acceptable and a more permanent solution.

Trail mowers and brushcutters can be used to aggressively clear the trail shoulder. Attempting to maintain the clearing limits with loppers or other hand tools is time and labor intensive.

Prune tree and brush limbs close to the trunk or main stem. For a clean cut, make a shallow undercut first, then follow with the top cut. This prevents the limb from peeling bark off the tree as it falls. Do not use an ax for pruning. If more than half of the tree needs pruning, it is usually better to cut it down. Cut trees off at ground level and do not leave pointed stobs or tripping hazards.

Limb and Branch Pruning



Logging Out. Logging out means cutting away trees that have fallen across the trail corridor. This work can be hazardous. The size of the trees, restrictions on motorized equipment, and your skill and training determine whether chainsaws, crosscut saws, bow saws, or axes are used. **Safety first!**

Volunteers are required to receive USDA-FS certification prior to operating a chainsaw or crosscut saw. Training, experience, and level of certification can allow volunteers to buck and limb trees that are already on the ground. Felling any standing tree is hazardous. Only individuals with felling certification are to undertake felling trees. Chainsaw operator skill levels and use restrictions are outlined in Chapter 207. FTA has adopted the USDA-FS requirements and procedures for chainsaw safety, training, uses and operations as outlined in Section 22.48, Chainsaw Operations of the USDA-

FS, FSH 6709.11, Health and Safety Code Handbook [<http://www.fs.fed.us/dirindexhome/fsh/6709.11/FSH6709.pdf>].

Cut (buck) and remove fallen trees 4-5 feet back from the trail's center line (remove a total of 8-10 feet). Bucking and limbing is considered a routine part of trail maintenance. Tree removal and/or felling should be pre-approved by the land manager.

Leaners are trees that have not fallen but are leaning across the trail. If a leaner is within the trail clearing limits, it should be removed. Beyond that, it is a matter of discretion whether a leaner needs to be cut.

Small hand saws are capable of cutting blowdowns up to six inches in diameter and can make a great start on clearing a trail. If a chainsaw logcut crew will follow, there may not be a need to try to cut larger logs. Logs are often easily dragged off the trail if they are neither too heavy nor attached at the base.

Routine Trail Maintenance and Construction resource material.

[Trail Construction and Maintenance Notebook](http://www.fs.fed.us/t-d/pubs/htmlpubs/htm07232806/toc.htm). Missoula, MT: USDA Forest Service, Technology and Development Program, 2007. [<http://www.fs.fed.us/t-d/pubs/htmlpubs/htm07232806/toc.htm>]

[Wetland Trail Design and Construction](http://www.fs.fed.us/t-d/pubs/htmlpubs/htm07232804/toc.htm). Missoula, MT: USDA Forest Service, Technology and Development Program, 2007. <http://www.fs.fed.us/t-d/pubs/htmlpubs/htm07232804/toc.htm>

Marking and Signing

For information on blazing and trail signs standards, see Chapters 202 (Trail Signage and Blazing) and 211 (Basic Trail Maintenance).

Trail signs are typically used to inform users they are on the Florida Trail and provide informational, directional, interpretive, and regulatory information. Additional guidance on FNST signage and blazing is contained in the Land Manager Resources for FNST Coalition Members: 303: [A Land Managers Guide to: Minimum Trail Standards and Guidelines for the Florida National Scenic Trail](#), and 304: [Addendum: Minimum Standards and Guidelines for the Florida National Scenic Trail](#).

Trail Facilities

Campsites and Camping Zones. FTA Regional Representatives and Section Leaders are to coordinate with land managers to obtain approval and assistance with campsite selection and development. Campsites should be provided on all sections of the Florida Trail. Such sites may be off the trail but at a reasonably close distance. Designated sites should be frequent enough to allow reasonable accommodation for hikers of varying abilities. Campsites are recommended to be located four to six miles apart based on the expected use of the trail and site, but in all cases are to be no more than one hiking day (eight to ten miles) apart. Some landowners may prohibit camping on their land. In selecting and locating a campsite, the following criteria should be considered:

- Select a reasonably level and clear wooded site that is near, but not on, the Trail.
- Avoid placing a campsite near dead or dying trees or areas subject to flooding.
- When possible, locate a campsite near a suitable water supply.

- Campsites should accommodate a minimum of six to eight small tents.
- There should be a reasonably close area that will accommodate the disposal of human waste.
- A campsite should be in a remote location at least one mile away from highways, public recreation areas, and residences.
- Vehicles should not be permitted, and their access to campsites should be restricted.

Bridges and Boardwalks. Installation or removal of any type of trail infrastructure requires land manager approval. FTA Regional Representatives and Section Leaders are to coordinate with land managers to obtain approvals and assistance with bridge and/or boardwalk construction. State and Federal regulations often require assessments and/or permits to construct bridges and boardwalks in wetland areas and over streams. If required, permits must be obtained prior to construction by the managing authority. Before constructing a bridge or boardwalk, attempt to find a suitable alternative corridor that eliminates or minimizes the construction, maintenance, and replacement of these costly structures.

Trailheads. *Major* trailheads are generally located near primary highways while *minor* trailheads are on secondary roads. Major trailheads will normally offer a higher level of infrastructure than minor trailheads. Trailhead infrastructures should at a minimum include a vehicle parking area and an informational kiosk or bulletin board. Kiosk information should include at a minimum:

- Local area trail map
- Land manager identification, requirements, and restrictions
- Clear identification of the FT (or other trail as applicable).

The Trail Crew and Leave No Trace

It is evident that trail work has an impact on the land, but trail work is meant to reduce *overall* impact. It is a tool to help manage use. It is successful if it quickly becomes invisible to the average trail user.

There are ways to bring Leave No Trace ethics into all the work completed on the trail, including how we conduct work parties, where we choose to camp and take breaks, and how a crew behaves in relation to visitors and wildlife. It is important that we foster a Leave No Trace ethic, since our members are models for trail users. How we perform and the end result of our work influences others' behavior.

- Be respectful of other visitors: minimize visual impacts, hide brush whenever possible, store tools and take breaks off the trail, and never leave stobs (a.k.a. staubs, pungy sticks) when brushing.
- Travel and take breaks on durable surfaces: keep off-trail disturbance to a minimum.
- Dispose of waste properly: pack out garbage you find or create, and dispose of human waste properly.

Closing a Trail

Trail relocations are common. When obliterating blazes due to relocation remove *all* the old blazes, not just the one where the old trail deviates from the new trail. The old blazes should be lightly scraped and obliterated with a gray or brown paint. The closed trail should be blocked with debris and/or signage to direct users onto the new pathway. Trail corridor changes or *Data Book* description changes should be

submitted using the Map Changes Procedure (see Chapter 206). Trail corridor changes may also require the submission of a *Notice to Hikers* (see Chapter 205).

Temporary Corridor Markers

Orange surveyor tape (flagging) should be used as temporary/emergency markers. The tape should be removed when the trail corridor is blazed.