

207: TOOLS, POWER EQUIPMENT AND MATERIALS

Hand Tools

There are a large variety of hand tools available for use in trail construction and maintenance, ranging from small screwdrivers and bark scrapers to larger tools such as Pulaskis and shovels. Regardless of the size or type of tool, proper use and care of it will ensure a safer and longer life for both the tool and the operator.

Prior to using any tool, inspect its condition. Check that handles are attached securely, and are not prone to slipping. If the tool has an edge, make sure it is properly sharpened. Repair or replace any tool that is not in top working condition.

When using any tool, be sure the surrounding area is free of other workers and potential hazards. This is often referred to as a person's "dime"—a ten-foot radius of awareness when using any tool. Individuals performing trail maintenance are required to read and sign the [General Trail Maintenance, Job Hazard Analysis](http://www.floridatrail.org/wp-content/uploads/2013/07/JHA_TrailMaintenance.pdf) [http://www.floridatrail.org/wp-content/uploads/2013/07/JHA_TrailMaintenance.pdf] prior to performing any trail maintenance task.

For a listing of commonly used hand tools, refer to [Handtools for Trail Work](#). Missoula, MT: USDA Forest Service, Technology and Development Program, 2005. [http://www.fs.fed.us/t-d/pubs/pdfpubs/pdf0523810/pdf05232810dpi72.pdf]

Power Tools

Power tools are an efficient way to build and maintain the trail. However, power tools can present hazards to users and bystanders. To help ensure safe operation of power tools:

1. Operators of power tools must have appropriate Personal Protective Equipment, training and supervision. Experienced crew leaders in the field must provide a safety briefing before tools are distributed. If possible, team experienced users with new users.
2. Read, understand, and follow the manufacturer's safety and maintenance rules. If necessary make several copies of each owner's manual and bring a copy of the manual to the field.
3. Work in groups. Do not have anyone operating a power tool out of sight of the group.
4. People working with or near power tools should wear eye, hearing, and other appropriate personal protection. It may be possible to have two groups, one with power tools and one without.
5. Be alert for fatigue. Require rest breaks for both hand and power tool operators. If possible, periodically change operators. Be sure each person has adequate water.
6. Immediately stop and correct unsafe behavior.
7. Keep all tools properly maintained, oiled, and sharpened.
8. Maintain a safe distance from others when power tools are in use. Follow the safe distance guidelines in the operator's manual.

Chainsaw. Chainsaws are effective tools for heavy-duty trail clearing and especially for removing downed trees. During operation adhere to the safe distance requirements and directions provided in the

manufacturer's operator manual. The following notes supplement the operator's manual. Safe use of a chainsaw should be of the utmost concern.

Operator Training and certification. Prior to operating a chainsaw, FTA volunteers are required to successfully complete formal classroom and hands-on training. The volunteer must receive certification based on skill level, and be able to perform specific chainsaw operations. The skill levels include: "A" apprentice sawyer, "B" intermediate sawyer, and "C" advanced sawyer. Operation restrictions include, but are not limited to, felling, bucking, brushing, and limbing. The restrictions are listed on the Certification Card issued to those who successfully complete the training. The certification period is limited to three years and operators must have concurrent First Aid and CPR certification. The chainsaw work performed by FTA staff and volunteers consists almost exclusively of clearing downed trees—i.e., bucking and limbing. The majority of FTA volunteers are only certified for bucking and limbing and are restricted to those operations. Felling is cutting down live or dead trees and few FTA sawyers have received this training. **Only sawyers with felling certification are to undertake cutting down live or dead trees.** FTA has adopted the requirements and procedures for chainsaw safety, training, uses, and operations as outlined in *Section 22.48-Chainsaw Operations* of the [Health and Safety Code Handbook](#) (Washington, U.S. Dept. of Agriculture, Forest Service, 1999. [<http://www.fs.fed.us/dirindexhome/fsh/6709.11/FSH6709.pdf>]) Sawyers and those working in the work area are required to read and sign the [Chainsaw, Job Hazard Analysis](#) [http://www.floridatrail.org/wp-content/uploads/2013/07/JHA_Chainsaw.pdf] prior to performing any chainsaw related task.

Chainsaw Personal Protective Equipment. The required Personal Protective Equipment for chainsaw use consists of the following:

- USFS approved hardhat
- Chainsaw chaps
- Eye protection
- Appropriate gloves
- Long-sleeve shirt
- 8"-high leather boots
- Hearing protection (85dB)
- Chainsaw General Equipment Kit

Chainsaw General Equipment Kit. The following equipment (Chainsaw General Equipment Kit) is also required to be readily available when operating a chainsaw:

- Fire extinguisher Type IV
- First Aid kit
- Chainsaw wrench
- Chain file w/ handle & guard
- Approved container for fuel
- Approved container for oil
- Wedges
- Single-bit axe or maul

Chainsaw Spare Parts Kit. The following spare parts should be carried in the field: spark plug, chain, chain sprocket, and air filter. Other tools are a spark plug wrench, Allen wrenches, screwdrivers, and pliers.

Brushcutter (a.k.a. Brush Saw). Like chainsaws, brushcutters are effective tools for heavy duty trail clearing when constructing new trail and maintaining existing trail—especially for removing the toughest kinds of brush, small trees, sparkleberry, palmettos, oak thickets, and cypress knees. Operators of brushcutters should first and foremost read and follow the directions provided in the brushcutter operator’s manual prior to operation of the equipment. For safety, anyone not directly assisting the brushcutter operator should be at least 50 feet from the work area. Operators and those working in the general area are required to read and sign the [Mower and Brushcutter, Job Hazard Analysis](http://www.floridatrail.org/wp-content/uploads/2013/07/FNST-Mower-and-Brushcutter-JHA-INAL.pdf) [http://www.floridatrail.org/wp-content/uploads/2013/07/FNST-Mower-and-Brushcutter-JHA-INAL.pdf] prior to performing any brushcutter related task.

The following tools and spare parts of appropriate size and model should be furnished with the brushcutter and carried in the field: a spark plug wrench, Allen wrenches, screwdrivers, pliers, spare blade, friction washer, one gallon of gasoline-oil mixture of the specified ratio, and rags.

Trail Mowers. The trail mower is a valuable labor-saving tool for both trail construction and trail maintenance. These mowers rank high on the list of hazardous equipment. Operators of trail mowers should first and foremost follow the directions provided in the operator’s manual prior to operation. Operators and those working in the general area are required to read and sign the [Mower and Brushcutter, Job Hazard Analysis](http://www.floridatrail.org/wp-content/uploads/2013/07/FNST-Mower-and-Brushcutter-JHA-FINAL.pdf) [http://www.floridatrail.org/wp-content/uploads/2013/07/FNST-Mower-and-Brushcutter-JHA-FINAL.pdf] prior to performing trail mowing or related task.

There are three main hazards: the blade, the rotating belt and pulleys, and objects flying from under the mower deck. All personnel should wear USDA-FS approved PPE (hardhats, work gloves, safety glasses, hearing protection, long pants and long sleeve shirts). Whenever a mower requires lifting over roots, logs, fences, water, etc. the motor must be turned off. If it becomes necessary to clear the blade by hand, first remove the wire from the spark plug.

Prior to any use the assigned operator must check the oil level.

After each 12 hours of operation, it is recommended that the following maintenance be performed:

1. Clean debris and dust accumulations with a hose or blower. Be sure the area around the oil filler is clean.
2. Remove and clean or replace the filter.
3. Drain oil and replace with the recommended oil specified in the operator’s manual.
4. Sharpen blade and balance. Replace bent or cracked blades.
5. Grease all lubrication points.
6. Clean debris wound around axles and top/bottom of blade shaft.
7. Clean cooling fins by blowing out debris; use a narrow wire as a pick if needed.
8. Inspect entire mower for cracked welds, bent or broken parts, loose wheel bearings, worn belt, etc.
9. Check tire pressure.
10. Spray carburetor linkage and flexible throttle cable with lubricant (WD-40).

Maintenance, Storage and Inventory of Trail Tools and Equipment

Each Chapter is responsible, at Chapter expense, for the maintenance, inventory, and secure storage of all tools and equipment assigned to their Section Leaders and/or Chapter.

Section Leaders are responsible for maintaining an inventory of the trail tools and equipment assigned to them, including where they are stored. The Chapter Trail Coordinator is responsible for annually inventorying all tools and equipment assigned to the Chapter and its Section Leaders. Equipment purchased with Challenge Cost Share Agreement funds are for use on the FNST only. Equipment inventories are to be completed and submitted annually, by May 31, to the FTA Office. Updated equipment inventories are also to be included with all equipment and tool requests submitted by Chapter Trail Coordinators or Section Leaders. The inventory form is in Section 300 ([*Chapter 307: Inventory of Trail Tools and Equipment; Florida Trail Association*](#)).

Acquisition and Disposition of Tools, Power Equipment and Materials

For information on acquisition and disposition of trail tools, see *Chapter 209: [Acquisition of Trail Tools, Equipment, Material and Services/Disposition of Tools](#)*.