

U.S. Department of Agriculture Forest Service	1. WORK PROJECT/ACTIVITY Volunteer Agreement 2012-SV-11083100-001, Chainsaw Operation	2. LOCATION Appalachian Trail	3. UNIT Region 8
JOB HAZARD ANALYSIS (JHA) References-FSH 6709.11 and -12 (Instructions on Reverse)	4. NAME OF ANALYST Michelle Mitchell with input from Darryl Harley	5. JOB TITLE A.T. Liaison	6. DATE PREPARED 4-27-12
Chainsaw Operation	Warning	<p><i>This activity is extremely dangerous.</i> Timber felling is among the most dangerous occupation in the woods</p> <p>Sawyers must have valid training and certification before operating a chainsaw on the Appalachian Trail. Sawyers must have prior instruction by competent individuals before felling trees.</p> <p>Do not attempt to fell trees without all the essential equipment, including PPE, chainsaw, small axe and swamper. See FS Health & Safety Code 3-15, MTDC <i>Chain Saw Training Course Guidebook</i>, and <i>Fallers Buckers Handbook</i> for more information.</p>	
Training Requirements		<ul style="list-style-type: none"> • Successful completion of the MDTC Chainsaw training course and current chainsaw certification. • Current certification in basic first-aid and CPR. 	
Personal Protective Equipment	PPE	<ul style="list-style-type: none"> • Hardhat • Chaps (must overlap top of boots by at least 2") • Eye and hearing protection • Sturdy boots—8 inches high, cut-resistant (leather), with lugged soles • Long pants and long-sleeve shirt • Gloves (cut-resistant for chain filing) • First-aid kit 	
Tree Felling	Size up Conditions and Surrounding Area	<ul style="list-style-type: none"> • Determine natural lean and condition of tree (rot, splits, loose bark etc.) and the best direction to be felled. • Be aware of other trees leaning into the tree being felled. • Be aware of snags in the area. • Do not cut during shifting, high, or gusty wind conditions. • Clean materials away from the tree's base that may pose a hazard. Avoid cutting above your shoulders. • Before cutting, determine your primary and secondary escape routes to a predetermined safe area. • Prepare your escape routes by cutting all tripping hazards. • Keep proper spacing between operators (at least 2½ tree lengths). 	
Making Undercuts Falling Materials	Saw Cuts and Flying Material	<ul style="list-style-type: none"> • Use open face method <ul style="list-style-type: none"> ○ notch is greater than 90 degrees ○ notch width is 80% of diameter (i.e., 20' tree means notch width is 16") • Bore into tree at same height as middle of notch to set up holding wood. Holding wood should be 10% of tree diameter (i.e., a 20' tree would have 2" of holding wood. • Use wedges where appropriate and finish back cut at the same height as bore cut. • Leave no Dutchman. 	

Back-cut Wedging and Falling Material	Announce Felling	<ul style="list-style-type: none"> • Notify others in the area that the tree is about to fall. • Remove loose bark before beginning back cut. • Make the back-cut slightly above (approximately 2" undercut), must be level and even. • Utilize swamper lookout under adverse conditions. • Wedge tree as soon as possible after beginning back-cut continue with the back-cut and tamp in wedges periodically.
Falling Trees and Pieces	Watch-outs	<ul style="list-style-type: none"> • Try to avoid hanging tree up in standing timber. • When the tree begins to fall, withdraw the saw from cut and shut it off. • Retreat to your safety area at an angle, not straight back. • Do not turn your back on a falling tree. • Continue to watch for falling limbs and/or other trees after the tree hits the ground.
Swamping	Being cut by fellow worker running brushcutting saw	Maintain a safe distance that is twice the length of the brushcutting saw.
Saw Maintenance and Fueling	Safeguards	<ul style="list-style-type: none"> • Keep chain sharp and with proper tension at all times. • Use gloves whenever working with the chain. • Beware of hot muffler. Ensure chain brake is working properly. • Ensure the carburetor is adjusted properly so the chain doesn't run at an idle. • Stop saw if the bar oil runs out before the saw gas does. • Fix pinched bar guide rails, bent bars or damaged tips immediately. • Use proper saw gas and oil fuel mixture. Never use motor oil or bar lubricant to mix with saw gas. • Clear an area around saw of flammable materials before fueling. • No smoking during fueling. • Do not start the saw at the point of fueling. • All timber fellers shall carry at least an 8-ounce fire extinguisher during the fire precaution period.
Extra Equipment Bucking Felled Trees and Kickback Shifting or Rolling Logs	Tools Bucking	<ul style="list-style-type: none"> • Keep axes sharp and handles tight and without cracks. • <i>Never use wooden or metal wedges.</i> Keep burs filed or cut down on plastic wedges. • Use only approved gas and oil containers. • Utilize bar covers when saws are transported and stored. • Watch saw tip and avoid cutting only with tip of bar. • Always keep a firm grip on the saw. • When bucking logs, be aware of the direction the logs may roll or move after bucking. • Do not stand on the downhill side of logs.
Limbing		<ul style="list-style-type: none"> • Stand on the opposite side of the tree from the side you are limbing; watch the saw tip. • Use extra caution with spring poles.
Cuts of axe	Tools Caution	<ul style="list-style-type: none"> • Be alert and handle tools with care. • Use the proper carrying method. Keep the sharp side of tool down. • Keep the cover on axe when not in use. • Add wedges to tool handles when loose or cracked.

Bee and Insect Kits	Sting Kits	<ul style="list-style-type: none">• Know who may have sting allergies and carry a sting kit.• Wear protective clothing and be aware of bee activity and nest sites (rotten logs, downed logs, hollow logs, etc.)
Fatigue and Heat Stress	Body Stress	<ul style="list-style-type: none">• Set a pace appropriate for the weather conditions.• Take frequent short breaks if necessary.• Stay alert at all times and watch your step.• Carry and drink plenty of water (up to 1 quart/hour if temperature is over 80).• Pay attention to your physical condition.• Observe team members for signs of dehydration and heat stress.
Fire Hazard	Fire Watch	After sawing, stay in the area for 10 to 15 minutes to watch for fires.

10. LINE OFFICER SIGNATURE	11. TITLE	12. DATE
<p style="text-align: center;">JHA Instructions (References-FSH 6709.11 and .12)</p> <p>The JHA shall identify the location of the work project or activity, the name of employee(s) involved in the process, the date(s) of acknowledgment, and the name of the appropriate line officer approving the JHA. The line officer acknowledges that employees have read and understand the contents, have received the required training, and are qualified to perform the work project or activity.</p> <p>Blocks 1, 2, 3, 4, 5, and 6: Self-explanatory.</p> <p>Block 7: Identify all tasks and procedures associated with the work project or activity that have potential to cause injury or illness to personnel and damage to property or material. Include emergency evacuation procedures (EEP).</p> <p>Block 8: Identify all known or suspect hazards associated with each respective task/procedure listed in block 7. For example:</p> <ol style="list-style-type: none"> Research past accidents/incidents. Research the Health and Safety Code, FSH 6709.11 or other appropriate literature. Discuss the work project/activity with participants. Observe the work project/activity. A combination of the above. <p>Block 9: Identify appropriate actions to reduce or eliminate the hazards identified in block 8. Abatement measures listed below are in the order of the preferred abatement method:</p> <ol style="list-style-type: none"> Engineering Controls (the most desirable method of abatement). For example, ergonomically designed tools, equipment, and furniture. 	<p style="text-align: center;">Emergency Evacuation Instructions (Reference FSH 6709.11)</p> <p>Work supervisors and crew members are responsible for developing and discussing field emergency evacuation procedures (EEP) and alternatives in the event a person(s) becomes seriously ill or injured at the worksite.</p> <p>Be prepared to provide the following information:</p> <ol style="list-style-type: none"> Nature of the accident or injury (avoid using victim's name). Type of assistance needed, if any (ground, air, or water evacuation). Location of accident or injury, best access route into the worksite (road name/number), identifiable ground/air landmarks. Radio frequencies. Contact person. Local hazards to ground vehicles or aviation. Weather conditions (wind speed & direction, visibility, temperature). Topography. Number of individuals to be transported. Estimated weight of individuals for air/water evacuation. <p>The items listed above serve only as guidelines for the development of emergency evacuation procedures.</p> <p style="text-align: center;">JHA and Emergency Evacuation Procedures Acknowledgment</p> <p>We, the undersigned work leader and crew members, acknowledge participation in the development of this JHA (as applicable) and accompanying emergency evacuation procedures. We have thoroughly discussed and understand the provisions of each of these documents:</p>	
<ol style="list-style-type: none"> Administrative Controls. For example, limiting exposure by reducing the work schedule; establishing appropriate procedures and practices. 	<p style="text-align: center;">SIGNATURE DATE</p> <p>_____</p>	<p style="text-align: center;">SIGNATURE DATE</p> <p>_____</p>
<ol style="list-style-type: none"> PPE (least desirable method of abatement). For example, using hearing protection when working with or close to portable machines (chain saws, rock drills, and portable water pumps). A combination of the above. 	<p>_____</p>	<p>_____</p>
<p>Block 10: The JHA must be reviewed and approved by a line officer. Attach a copy of the JHA as justification for purchase orders when procuring PPE.</p>	<p>_____</p>	<p>_____</p>
<p>Blocks 11 and 12: Self-explanatory.</p>	<p>_____</p>	<p>_____</p>