

<b>U.S. Department of Agriculture Forest Service</b>	<b>1. WORK PROJECT/ACTIVITY</b>  <b>Volunteer Agreement 2012-VS-11083100-001</b>	<b>2. LOCATION</b>  <b>Appalachian Trail</b>	<b>3. UNIT</b>  <b>R8</b>
<b>JOB HAZARD ANALYSIS (JHA)</b> References-FSH 6709.11 and 12 (Instructions page 3)	<b>4. NAME OF ANALYST</b> Michelle Mitchell with input from Darryl Harley	<b>5. JOB TITLE</b>  A.T. Liaison	<b>6. DATE PREPARED</b>  4/27/12
<b>7. TASKS/PROCEDURES: Crosscut Saw Operation</b>	<b>8. HAZARDS</b>	<b>9. ABATEMENT ACTIONS</b> <b>Engineering Controls * Substitution * Administrative Controls * PPE</b>	
<b>Training Requirements</b>		<ul style="list-style-type: none"> <li>• Successful completion of the MDTC Crosscut Saw Training course</li> <li>• Certified in basic first-aid and CPR or an individual who is qualified in basic first-aid and CPR is available in project area and is not operating a saw</li> <li>• An uncertified crosscut-saw helper needs to have specific on-site instruction in tool handling and safety prior to assisting sawyer.</li> </ul>	
<b>Certification and Instructor Limits</b>		<ul style="list-style-type: none"> <li>• Crosscut operators shall be properly certified prior to operation and will adhere to any restrictions or limitations placed upon them.</li> <li>• Crosscut operators may only exceed the restrictions or limitations placed on them if they are under the supervision of a qualified individual who is certified at a higher level of saw operation.</li> <li>• For the purposes of training, additional individuals besides the saw operator may be allowed within the safety radius (2½ times the height of the tree being felled) if under supervision of a qualified instructor.</li> </ul>	
<b>Personal Protective Equipment</b>	Cuts, Eye Injuries	<ul style="list-style-type: none"> <li>• Proper PPE must be worn at all times: <ul style="list-style-type: none"> <li>○ Appropriate gloves (cut-resistant for sharpening)</li> <li>○ Hardhat</li> <li>○ Long-sleeve shirt</li> <li>○ Boots—should provide support to the ankle, be of heavy duty, cut-resistant material, be water repellent, and have a nonskid sole</li> <li>○ Eye protection</li> <li>○ Chaps (optional)</li> </ul> </li> <li>• An ax and adequate wedges are deemed safety equipment that must be available for all sawing operations.</li> </ul>	
<b>Crosscut Saw: General</b>		<ul style="list-style-type: none"> <li>• Crosscut saws have only one operator who is entirely responsible for sawing even when a helper or second sawyer is used.</li> <li>• Must have a proper covering sheath for all the cutting teeth</li> <li>• Must be sheathed when in transport</li> <li>• Must have good working handles</li> <li>• Saws must be sharp and in serviceable condition</li> </ul>	
<b>Crosscut Saw: Transporting</b>	Cuts	<ul style="list-style-type: none"> <li>• Ensure saw is sheathed when transporting</li> <li>• Handles should be removed if moving through thick vegetation to prevent snagging</li> <li>• If transporting by packstock: <ul style="list-style-type: none"> <li>○ Bend in a horseshoe shape with teeth pointed backwards</li> <li>○ Secured saw to the middle of the pack saddle</li> <li>○ Saw should be on lead animal</li> </ul> </li> </ul>	

<b>Communications</b>	Injury or cuts	<ul style="list-style-type: none"> <li>• Must have established means of communication (i.e., yelling, radio, hand signals, etc.)</li> <li>• Communications must be clear, concise, and understood by everyone involved.</li> </ul>
<b>Escape routes</b>	Injury or cuts	<ul style="list-style-type: none"> <li>• All felling operations require clean escape routes with a minimum 20-foot path before starting to cut.</li> <li>• Choose an escape path that extends diagonally away from the expected felling line. Always have an alternate retreat path to a safety zone.</li> <li>• Where two fellers are operating a crosscut saw each must have separate escape routes if exiting the stump at the same time.</li> </ul>
<b>Weather/Darkness</b>	Injury or cuts	<ul style="list-style-type: none"> <li>• Do not saw during high winds, electrical storms or other hazardous weather.</li> <li>• Do not conduct felling operations if the tops or the 2½-tree-length safety circle is obscured by darkness, smoke, fog, or any other condition.</li> </ul>
<b>Size-up</b>	Injury, cuts, or death	<ul style="list-style-type: none"> <li>• Size up the tree considering the tree species, height, diameter, lean, soundness, current and previous fire damage, split or broken top, widow-makers, and other hazard-tree indicators.</li> <li>• Bore tree if necessary to determine soundness.</li> <li>• Walk anticipated lay of tree and check for hazards.</li> <li>• Clear work area of hazards and obstructions.</li> <li>• Determine and clear primary and secondary escape routes.</li> <li>• Ensure that area 2½ times the height of the tree to be felled is clear of personnel.</li> <li>• Be alert for environmental conditions that could increase risk (strong/gusty winds, steep slopes, etc.)</li> <li>• Ensure adequate traffic control measures are taken on roads and trails.</li> <li>• If the identified tree cannot be safely removed and presents a hazard, the area will be flagged off at a safe distance and an alternate mitigation used.</li> </ul>
<b>Felling Process</b>	Head Injury Eye Injury Cuts Amputation Crushing Injuries Death	<ul style="list-style-type: none"> <li>• Only crosscut saw operators who have been certified at the appropriate level will conduct crosscut felling operations.</li> <li>• No employee shall approach a feller closer than 2½ times the lengths of trees being felled until the feller has acknowledged that it is safe to do so, unless it is demonstrated that a team of employees is necessary to manually fell a particular tree.</li> <li>• Follow proper felling procedure as outlined in MTDC crosscut course.</li> <li>• Initiate undercut at a level that ensures adequate footing and balance throughout cutting sequence.</li> <li>• Prior to starting the back cut, survey the area to ensure that nobody has entered the area. A warning should be sounded as to the intentions of your actions (i.e., “tree coming down, sidehill”).</li> <li>• At the first sign of the tree committing to the undercut, proceed to safety zone.</li> <li>• No felling operations will be conducted at night or during times the top of tree being felled is obscured.</li> </ul>

<b>Bucking / Limbing</b>	Injury or cuts	<ul style="list-style-type: none"><li>• Anticipate log tensions and compressions.</li><li>• Watch for and carefully relieve tension on saplings and limbs (springpoles) with a series of small cuts to compression side.</li><li>• Use wedges.</li><li>• Use caution when cutting limbs supporting logs off the ground.</li><li>• Avoid finishing cuts from downhill side.</li><li>• Sound warning for all objects moving downhill.</li><li>• Do not buck logs on steep slopes with people below.</li><li>• Ensure escape route.</li></ul>
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10. LINE OFFICER SIGNATURE	11. TITLE	12. DATE																			
<p style="text-align: center;"><b>JHA Instructions (References-FSH 6709.11 and .12)</b></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><b>Blocks 1, 2, 3, 4, 5, and 6:</b> Self-explanatory.</p> <p><b>Block 7:</b> 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><b>Block 8:</b> Identify all known or suspect hazards associated with each respective task/procedure listed in block 7. For example:</p> <ul style="list-style-type: none"> <li>a. Research past accidents/incidents.</li> <li>b. Research the Health and Safety Code, FSH 6709.11 or other appropriate literature.</li> <li>c. Discuss the work project/activity with participants.</li> <li>d. Observe the work project/activity.</li> <li>e. A combination of the above.</li> </ul> <p><b>Block 9:</b> 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> <ul style="list-style-type: none"> <li>a. Engineering Controls (the most desirable method of abatement). For example, ergonomically designed tools, equipment, and furniture.</li> <li>b. Substitution. For example, switching to high flash point, non-toxic solvents.</li> <li>c. Administrative Controls. For example, limiting exposure by reducing the work schedule; establishing appropriate procedures and practices.</li> <li>d. 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).</li> <li>e. A combination of the above.</li> </ul> <p><b>Block 10:</b> 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 style="text-align: center;"><b>Emergency Evacuation Instructions (Reference FSH 6709.11)</b></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> <ul style="list-style-type: none"> <li>a. Nature of the accident or injury (avoid using victim's name).</li> <li>b. Type of assistance needed, if any (ground, air, or water evacuation).</li> <li>c. Location of accident or injury, best access route into the worksite (road name/number), identifiable ground/air landmarks.</li> <li>d. Radio frequencies.</li> <li>e. Contact person.</li> <li>f. Local hazards to ground vehicles or aviation.</li> <li>g. Weather conditions (wind speed &amp; direction, visibility, temperature).</li> <li>h. Topography.</li> <li>i. Number of individuals to be transported.</li> <li>j. Estimated weight of individuals for air/water evacuation.</li> </ul> <p>The items listed above serve only as guidelines for the development of emergency evacuation procedures.</p> <p style="text-align: center;"><b>JHA and Emergency Evacuation Procedures Acknowledgment</b></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> <table style="width:100%; margin-top: 20px;"> <thead> <tr> <th style="text-align: center;">SIGNATURE</th> <th style="text-align: center;">DATE</th> <th style="text-align: center;">SIGNATURE</th> <th style="text-align: center;">DATE</th> </tr> </thead> <tbody> <tr> <td style="border-top: 1px solid black; width: 25%;"></td> <td style="border-top: 1px solid black; width: 25%;"></td> <td style="border-top: 1px solid black; width: 25%;"></td> <td style="border-top: 1px solid black; width: 25%;"></td> </tr> <tr> <td style="border-top: 1px solid black;"></td> <td style="border-top: 1px solid black;"></td> <td style="border-top: 1px solid black;"></td> <td style="border-top: 1px solid black;"></td> </tr> <tr> <td style="border-top: 1px solid black;"></td> <td style="border-top: 1px solid black;"></td> <td style="border-top: 1px solid black;"></td> <td style="border-top: 1px solid black;"></td> </tr> <tr> <td style="border-top: 1px solid black;"></td> <td style="border-top: 1px solid black;"></td> <td style="border-top: 1px solid black;"></td> <td style="border-top: 1px solid black;"></td> </tr> </tbody> </table>	SIGNATURE	DATE	SIGNATURE	DATE																
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**Blocks 11 and 12:** Self-explanatory.