

<p><b>Department of the Interior</b></p> <p><b>National Park Service</b></p>	<p><b>1. WORK PROJECT/ACTIVITY</b>                  Trailwork                  Volunteer Agreement                  MOU 2490-05-001</p>	<p><b>2. LOCATION</b></p> <p><b>Appalachian National Scenic Trail</b></p>	<p><b>3. UNIT</b></p> <p><b>APPA</b></p>
<p><b>JOB HAZARD ANALYSIS (JHA)</b>                  References-FSH 6709.11 and -12                  (Instructions on Reverse)</p>	<p><b>4. NAME OF ANALYST</b>                  Todd Remaley with input                  from David Reus and Bob                  Proudman                  (JHA based on USDA FS R8                  AT Volunteer Agreement)</p>	<p><b>5. JOB TITLE</b></p> <p>ANST Chief Ranger</p>	<p><b>6. DATE PREPARED</b></p> <p>5/16/12</p>
<p><b>7. TASKS/PROCEDURES</b></p>	<p><b>8. HAZARDS</b></p>	<p><b>9. ABATEMENT ACTIONS</b>                  Engineering Controls * Substitution * Administrative Controls * PPE</p>	
<p><b>Vehicle Operation</b></p>	<p>Fatigue                  Narrow, rough roads                  Poor visibility                  Mechanical failure                  Weather                  Pedestrians and Bicycles</p>	<ul style="list-style-type: none"> <li>• Drive defensively and slowly.</li> <li>• Always wear seatbelts and turn lights on.</li> <li>• Ensure that you have reliable communication.</li> <li>• Obey road speed limits.</li> <li>• Use spotter when backing.</li> <li>• Use parking brake, and do not leave vehicle while it is running.</li> <li>• Inform someone of your destination and estimated time of return. Call in if plans change.</li> <li>• Carry extra food, water, and clothing.</li> <li>• Stop and rest if fatigued.</li> <li>• Refer to pages 20–72 in the Forest Service Health &amp; Safety Code Handbook (H&amp;SC).</li> </ul>	
	<p>Getting Lost</p>	<p>Use map if possible. Drivers should know where the destination point is. Maintain visual contact with another vehicle.</p>	
<p><b>Hiking on the Trail</b></p>	<p>Dehydration                  Contaminated Water</p>	<ul style="list-style-type: none"> <li>• Increase fluids on hotter days or during extremely strenuous activity. Drink as much as 1 quart of water per hour when the temperature is above 80 degrees.</li> <li>• Drink water from a municipal source. If none available, use proper filtering/treatment techniques. Boil water for at least 1 minute, use appropriate chemical treatment (e.g., iodine tablets), or use an approved water filtration pump.</li> <li>• Observe team members for signs of dehydration.</li> <li>• Review map or ask crew leader about water sources, keeping in mind the seasonality of the water source.</li> </ul>	
	<p>Falling objects                  Surface conditions                  Snags                  Trail hazards                  Carrying tools</p>	<ul style="list-style-type: none"> <li>• Be aware of your surroundings and watch where you step.</li> <li>• Look overhead for dead limbs and dead hung-up limbs (widow-makers).</li> <li>• Look for root-sprung trees and snags.</li> <li>• Be aware of and prepared for water crossings and marshes. When fording streams, use a walking stick for an extra point of contact to provide stability, and undo hip belt so pack can be shed if it snags or pulls you under water.</li> <li>• Maintain a safe walking distance between people (10 feet minimum).</li> <li>• Always sheath tools and carry them on the downhill side of the trail.</li> <li>• The person carrying the crosscut saw, rock bar, or pole saw should walk last.</li> </ul>	

	Weather	<ul style="list-style-type: none"> <li>• Know the weather forecasts. You can experience rain, hail, snow, lightning, extreme heat, and sudden drops in temperature on the A.T.</li> <li>• Be watchful throughout the day for changing weather.</li> <li>• Take appropriate gear and additional clothing.</li> </ul>
	Getting Lost	<ul style="list-style-type: none"> <li>• Identify safe routes and local conditions.</li> <li>• Hike in a group. Designate a meeting spot should someone become separated. If one has to depart from the trail, advise the crew</li> <li>• Make sure visual contact is kept at forks in the trail.</li> <li>• Avoid hiking in the dark.</li> </ul>

	Foot Damage	<ul style="list-style-type: none"> <li>• Wear appropriately sized hiking boots and socks.</li> <li>• Take into account the terrain, the work, and the weather.</li> <li>• Communicate before moving heavy objects.</li> <li>• Use cornstarch as a drying agent on blisters.</li> </ul>
	Sun Exposure	<ul style="list-style-type: none"> <li>• Wear protective clothing including long-sleeve shirt, long pants, full brimmed hat/helmet.</li> <li>• Use sun block and lip balm.</li> </ul>
	Heavy Brush	<ul style="list-style-type: none"> <li>• Wear protective clothing such as long-sleeve shirt, long pants, helmet, work gloves, and protective eye wear.</li> <li>• Watch for others when discarding brush. Throw brush out of sight from the trail.</li> <li>• In heavy undergrowth, lift knees high to clear obstacles.</li> </ul>
<b>Working Outdoors</b>	Dehydration Heat Exhaustion Heat Stroke	<ul style="list-style-type: none"> <li>• Increase fluids on hotter days or during extremely strenuous activity. Drink as much as 1 quart of water per hour when the temperature is above 80 degrees.</li> <li>• Take frequent rest breaks in the shade.</li> <li>• Observe team members for signs of dehydration and heat exhaustion and treat immediately. If there is not quick improvement, seek medical attention.</li> <li>• Heat stroke is a medical emergency requiring evacuation.</li> </ul>
	Animals	<ul style="list-style-type: none"> <li>• Watch for snakes, which may be found under logs, in shady areas, or sunning on rocks. Look before stepping over logs and rocks.</li> <li>• Be able to identify poisonous snakes that are found along the A.T. In case of a bite, provide first-aid and seek medical attention quickly. Do not attempt to remove venom by cutting the bite area.</li> <li>• Be "Bear Aware" and use appropriate food-storage devices.</li> </ul>
	Biting and Stinging Insects: Ticks, Spiders, Mosquitoes, Wasps, Bees	<ul style="list-style-type: none"> <li>• Identify crew members with sting allergies and carry bee sting kits containing epinephrine.</li> <li>• Be aware of potential for hives in brush or hollow logs.</li> <li>• Use appropriate insect repellants on skin and clothing.</li> <li>• Clothing should fit tightly at wrists, ankles, and waist. Tuck in shirt tails.</li> <li>• Search yourself, especially hair and clothing, for ticks and insects frequently.</li> <li>• Bathe and/or change clothes after each work day.</li> <li>• Remove embedded ticks properly.</li> <li>• Seek treatment promptly if symptoms of tick-borne illness develop later, even if tick bite was not known to occur.</li> </ul>
	Poison Oak/Oak/Sumac	<ul style="list-style-type: none"> <li>• Identify crew members who are allergic and keep them out of work locations where poisonous plants are present.</li> <li>• Educate crew members on plant ID.</li> <li>• Wear gloves when pulling weeds.</li> </ul>

	<ul style="list-style-type: none"> <li>• Use care removing or handling gloves and other clothing that may have been in contact with poisonous plants.</li> <li>• Whenever the skin contacts a poisonous plant or noxious weed, wash the area with cold water within 1 to 3 minutes or as soon as possible.</li> <li>• While working in a poisonous plant environment, do not use soap and/or hot water that can remove the natural protective oils from your skin. Upon returning from the field, use rubbing alcohol to cleanse contacted skin.</li> </ul>
Hikers	<ul style="list-style-type: none"> <li>• Inform the others when you see hikers on the trail.</li> <li>• Stop work until the hikers clear the work area.</li> <li>• Ensure that hikers have a clear path and communicate it to them.</li> <li>• If a potential hazard exists, crew members can stand watch at safe distances and stop hikers until the hazard is cleared.</li> <li>• Place tools off the trail in a centralized location. Keep shields on sharp edges when tool is not in use.</li> </ul>
Stock – Applicable in only a few places	<ul style="list-style-type: none"> <li>• Listen and look for approaching stock.</li> <li>• Inform everyone when stock approaches.</li> <li>• Stop work until the stock has passed the work site.</li> <li>• Stand off the trail on the downhill side.</li> <li>• Place tools a safe distance away from the trail.</li> <li>• Do not make sudden movements or loud noises. It may be helpful to take your hard hat off until animals pass. Remain calm and back away if animals become unruly.</li> </ul>
Sharp Tools	<ul style="list-style-type: none"> <li>• Carry tools safely as instructed by crew leader.</li> <li>• Carry tools on the downhill side.</li> <li>• Carry tool with scabbard on.</li> <li>• Carry sharpened edge of tool downward and away from your body.</li> <li>• Be aware of others around you.</li> <li>• Do not carry tools on your shoulder except rock bar, pole saw, or crosscut saw.</li> <li>• Space yourselves when hiking.</li> </ul>
Back Injury	<ul style="list-style-type: none"> <li>• Use proper lifting techniques when picking up items: bend knees, not back; lift straight.</li> <li>• Stretch periodically.</li> <li>• Work with a partner.</li> </ul>
Tool Use	<ul style="list-style-type: none"> <li>• Properly maintain and care for tools. Keep tools sharp. Do not use a tool with a loose handle.</li> <li>• Wear gloves, hardhat, and boots.</li> <li>• Be aware of others working around you</li> <li>• Look around for people and hazards before swinging tools.</li> <li>• Have firm footing and be balanced when swinging.</li> <li>• Never throw a tool.</li> <li>• When not in use, shield any sharp edges.</li> <li>• Move large rocks by hand or with a lever or bar versus hitting with a tool.</li> <li>• Maintain tight grip on tool handles.</li> <li>• Use gentle but deliberate hoeing action.</li> <li>• Avoid working in the dark.</li> </ul>

	Hand and Foot Damage	<ul style="list-style-type: none"> <li>• Communicate when moving large or heavy objects.</li> <li>• Do not roll anything heavy when people are downhill.</li> <li>• Anticipate the roll of any loose object.</li> <li>• Watch for limb and stubs on rolling trees.</li> </ul>
	Overhead hazards	<ul style="list-style-type: none"> <li>• Be watchful for loose limbs on trees.</li> <li>• Be careful of standing dead trees and snags.</li> <li>• Avoid working at an unsafe site.</li> </ul>
<b>Working During Hunting Season</b>	User conflicts, fire-arm safety	<ul style="list-style-type: none"> <li>• Wear Hunter's ORANGE vests during hunting seasons.</li> <li>• Post signs near work sites to warn hunters of employee and crew locations.</li> <li>• Reschedule jobs to work outside of hunting season dates, when possible.</li> </ul>
<b>Working on the Trail</b>	<p>Refer to ATC document "<i>Trail Maintenance and Construction Tasks Their Hazards, and Recommended Safety Gear</i>"</p> <p>Overhead Hazards</p> <p>Log Work</p>	<p>Refer to ATC document "<i>Trail Maintenance and Construction Tasks Their Hazards, and Recommended Safety Gear</i>" for all trailwork.</p> <p>Additionally, hardhats (helmets) are required for the following tasks: cutting brush and power mowing. Hardhats are also required in any situation where there has been a weather event that may have produced widow makers, hazard trees, and/or or blowdowns.</p> <p>In addition to the PPE and mitigations required by the ATC document, boots are required while performing log work. Also, slippery logs should be braced to avoid rolling or sliding downhill. When limbing and peeling, work on the side of the log opposite from where you are standing.</p>
<b>Communication</b>	Phones	<ul style="list-style-type: none"> <li>• Carry a cell phone with a fully charged battery, but be aware that cell phones do not work along many sections of the AT.</li> <li>• Know the location of the nearest working landline and, if possible, the nearest location for cell phone service.</li> <li>• If available, carry a satellite phone.</li> </ul>
	Radios	<ul style="list-style-type: none"> <li>• Radios are generally not available, but some agency partners may be able to provide them. If available, the FS will provide a portable agency hand-held radio for work trips.</li> <li>• Ensure radio has properly programmed frequencies, is in working order, and has an extra set of batteries before leaving on the trip. Know usable repeaters and best locations to use radios during emergency.</li> <li>• Make sure everyone knows how to use the radio.</li> <li>• Know who is available to hear you call on the radio, as FS staffing may be limited or not available after regular work hours and on weekends.</li> </ul>
	Check-in/Check-out	<ul style="list-style-type: none"> <li>• Make sure you leave your itinerary with someone that includes where you will be working and what time you expect to return.</li> <li>• Some agencies may ask that you check in before project and check out after project with a designated representative.</li> </ul>
<b>Emergency Response</b>	Emergency Response	<ul style="list-style-type: none"> <li>• Know the locations of the closest hospital and the closest road intersection or easily identifiable meeting point where an ambulance could be met</li> <li>• Inform crew members of those locations prior to beginning work activity.</li> <li>• In an emergency situation, CALL 911 FIRST. Then contact designated ATC and/or agency partner staff.</li> </ul>

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>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> <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>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> <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>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>Blocks 11 and 12: Self-explanatory.</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%; border: none;"> <thead> <tr> <th style="text-align: center; border: none;">SIGNATURE</th> <th style="text-align: center; border: none;">DATE</th> <th style="text-align: center; border: none;">SIGNATURE</th> <th style="text-align: center; border: none;">DATE</th> </tr> </thead> <tbody> <tr> <td style="border: none; text-align: center;">_____</td> <td style="border: none;"></td> <td style="border: none; text-align: center;">_____</td> <td style="border: none;"></td> </tr> <tr> <td style="border: none; text-align: center;">_____</td> <td style="border: none;"></td> <td style="border: none; text-align: center;">_____</td> <td style="border: none;"></td> </tr> <tr> <td style="border: none; text-align: center;">_____</td> <td style="border: none;"></td> <td style="border: none; text-align: center;">_____</td> <td style="border: none;"></td> </tr> <tr> <td style="border: none; text-align: center;">_____</td> <td style="border: none;"></td> <td style="border: none; text-align: center;">_____</td> <td style="border: none;"></td> </tr> </tbody> </table>	SIGNATURE	DATE	SIGNATURE	DATE	_____		_____		_____		_____		_____		_____		_____		_____	
SIGNATURE	DATE	SIGNATURE	DATE																			
_____		_____																				
_____		_____																				
_____		_____																				
_____		_____																				

