


Appalachian National Scenic Trail		1. WORK PROJECT/ACTIVITY Performing Work Activities with Hand Tools	2. LOCATION Park Wide	Includes work performed on lands of National Park Service, and various state's park and lands
JOB HAZARD ANALYSIS (JHA) References-FSH 6709.11 and -12 OSHA (Instructions on Reverse)		3. NAME(S) OF ANALYST(S) Keith Stegall, Facility Manager	4. Work Supervisor Various	5. DATE PREPARED 09/14/2018
Required Standards and General Notes:	Familiarity with facility maintenance hand tools and their uses and care.			
Required Personal Protective Equipment	Work gloves, sturdy boots, long pants, hard hats, safety glasses, depending on activity.			
Tools and Equipment	EXAMPLES: loppers, fire rake, McLeod, hazel hoe, rogue hoe, pick mattock, cutter mattock, pulaski, swing blade, shovel, hand pruner, hand saw, bow saw, "weed wrench", brush hook/cutter, rockbar, wheelbarrow, sledgehammer, tape measure, pole saw, etc.			
Available Training	Essential Trail Maintenance; <i>Appalachian Trail Design, Construction, and Maintenance</i> , Dawson, Proudman, and Birchard			
7. TASKS/PROCEDURES		8. HAZARDS, POTENTIAL HAZARDS / INJURY SOURCE	9. ABATEMENT ACTIONS OR PROCEDURES Engineering Controls * Substitution * Administrative Controls * PPE	
Pre-Operation Inspect and Selection of Hand Tools		Defective or poorly cared-for Tool	<ul style="list-style-type: none"> • Check handles and other key component of hand tools to ensure they are secure, without splinters or burrs, and are not broken, cracked, bent, twisted, or slippery. • If tool has moving parts or nut/bolts, ensure they are tight and/or in working order prior to use. • If applicable, always use a tool sheath when not in use. • If applicable, ensure tool is properly sharpened. • If tool is found to be defective, remove tool from inventory and mark it for lockout tagout. 	
		Insufficient Training	<ul style="list-style-type: none"> • Ensure you are properly trained in the tool's proper operation. • If applicable, refer to user manuals for proper operation, rating, and care. 	
Loading/Unloading/Transporting Hand Tools By Vehicle		Lifting Heavy/ Awkward Loads	<ul style="list-style-type: none"> • Always make sure you are comfortable with the load you are lifting. • Whenever possible use two people when loading any items (especially heavy/ odd sized items). • Wear proper PPE at all times. • Do not twist and lift simultaneously. • Always move your feet while you move your body. 	

	Slips / Trips / Falls / Poor Footing	<ul style="list-style-type: none"> Always make sure you are comfortable with the load you are lifting. Whenever possible use two people when loading any items (especially heavy/ odd sized items). Make sure vehicle transport area is dry and footing is adequate. Be aware that tools and equipment may move during transport. Secure large tools. Wear proper PPE at all times.
	Eye Injuries	<ul style="list-style-type: none"> Wear eye protection and all other proper PPE at all times, as required by tool or task.
Transporting Hand Tools To and From Worksite By Hand	Injury To Self	<ul style="list-style-type: none"> Carry tools on the downhill side of the Trail whenever possible, with the sharp side pointed down so that if worker carrying it loses footing, the tool can easily be released or tossed aside rather than landing atop worker. Do not carry tools on shoulder or across body. Practice good body mechanics when lifting and carrying tools. Keep tools close to your body. Sheathe sharp edges of tools. Always make sure you are comfortable with the load you are carrying. Ensure you are traveling on solid footing. Use caution in areas with insecure footing. Wear proper PPE: gloves, boots.
	Injury To Others	<ul style="list-style-type: none"> Maintain a safe following distance between workers - typically 10 ft. Ensure tools are well secured on or inside pack and appropriately sheathed, or hand-carry. When encountering the public, move to side of Treadway and let them pass. Take care to keep tools out of range of passing visitor. Look before turning to ensure no one is within your tools swing range.
Hand Tool Operation: Digging; Scooping; Pounding; Hammering; Lifting; Carrying; Prying; Scraping; Pouring; Spraying; Transporting; Painting; Spreading; Planing; Cutting; Sawing; Puncturing; Bracing; Shimming; Climbing; Measuring; Marking; Brushing; Mowing; Sweeping; Mixing; Sharpening; Cleaning; Breaking; Crushing; Compacting; Grading; Pulling; Pushing; etc.	Back / Muscle Strain	<ul style="list-style-type: none"> Perform targeted stretching exercises prior to operating hand tools. Bend at the knees and hips rather than the back to improve ergonomic use of tools and prevent back strain. Use all tools in motion parallel to the handle grain. Never turn and twist your body while operating a hand tool.
	Repetitive Stress / Exhaustion	<ul style="list-style-type: none"> Rotate tasks on tools and activities with other crew members to prevent repetitive stress. Switch hands if possible to spell your dominant hand / side of your body.

		<ul style="list-style-type: none"> ● Ensure you are well rested when not working. Get a full eight hour nights sleep.
	Bludgeon Injury	<ul style="list-style-type: none"> ● Maintain control of tool at all times. ● Use particular caution with picks that may have heads that easily detach from handles; do not use overhead. ● Never pry objects with a rockbar between your legs or near yours or someone else's head.
	Improper Use of Tool	<ul style="list-style-type: none"> ● Ensure all tools are sharp and in proper working condition. ● Never use tools for something they are not designed/rated to be used for. ● Refer to operator's manuals if applicable. ● Never remove a safety component from a tool. ● Never alter a tool unless the manufacturer recommends it.
	Injury To Others	<ul style="list-style-type: none"> ● Maintain a safe working distance (10' minimum from others) ● Workers should announce themselves with "coming through..." before moving through work area. ● Workers should down tools and pause as passersby approach and pass through. ● Workers should announce "hikers!" to alert workers to the presence of others approaching to pass by. ● Stay in constant communication with workers working below you i.e. switchbacks, ladders, roofs, scaffolding, hillsides, etc.,
	Improperly Stored / Maintained Tools At Worksite	<ul style="list-style-type: none"> ● When not in use, tools should be stored on the uphill side of the Trail with the sharp edge facing away from the Treadway to prevent accidentally catching clothing or being stepped on. ● Tools must be regularly inspected to ensure they are in proper working condition. ● Any tool not in proper working condition must be marked and removed for lockout / tagout until repaired.
	Flying Debris	<ul style="list-style-type: none"> ● Always wear eye protection when operating tools that have the potential to produce flying debris or when recommended by manufacturer. ● Take care what direction materials are likely to fly when moving, disturbing, or crushing materials. ● Be mindful of where others are in your work area. Let others know when you are potentially going to produce flying debris, dust, smoke, etc. prior to beginning work.
	Head Injury	<ul style="list-style-type: none"> ● All workers working below another worker must wear a hard hat at all times. ● Any worker operating a tool that goes above their head must wear a hard hat.

		<ul style="list-style-type: none"> Any tool whose manufacture recommends the use of a hard hat, must wear a hard hat all times during the operation of that tool. Ensure all tools are in proper working order prior to operation. All hard hats must meet OSHA requirements. Regularly inspect all hard hats to ensure they are not compromised and continue to meet OSHA regulations.
	Pinched Fingers	<ul style="list-style-type: none"> Keep hands away from potentially dangerous tight spaces. Wear PPE - Safety gloves. Refer to specific tool manufacturers recommendations to determine appropriate safety gloves. Inspect tools and objects prior to operating tools. If working as a team, use good communication skills.
	Cuts / Abrasions	<ul style="list-style-type: none"> Do not use tool to cut materials it is not intended for or rated for. Always keep sharp edges working away from your body. Always wear safety gloves when operating/handling tools.
	Splinters / Metal Burrs	<ul style="list-style-type: none"> Always inspect tools for cracks, splinters, burrs, etc. prior to operation. Always wear safety gloves when operating/handling tools.
	Eyes	<ul style="list-style-type: none"> Eye protection must fully cover the front and sides of eyes - wrapping glasses, goggles, etc. Eye protection must be rated for impact (e.g, personal prescription eyewear may not protect against flying debris). Ensure eye protection provides sufficient visibility by keeping them clean. Provide cleaning materials. Discard and replace when scratched.
	Slips / Trips / Falls	<ul style="list-style-type: none"> Ensure your working space is on a sturdy, firm surface. If feasible, remove all protrusions or objects from your work site that might pose a potential hazard. Use proper caution (Take Your Time) when climbing or descending with a tool. Use extra caution in wet or windy condition. Avoid working near drop-offs with more than a 36" fall without fall protection training and PPE. Hard hats are required during any overhead work.

10. OFFICIAL SIGNATURE 	11. TITLE Acting Chief Ranger	12. DATE 9-18-18
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Previous edition is obsolete

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JHA Instructions (References-FSH 6709.11 and .12)

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.

Blocks 1, 2, 3, 4, 5, and 6: Self-explanatory.

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).

Block 8: Identify all known or suspect hazards associated with each respective task/procedure listed in block 7. For example:

- a. Research past accidents/incidents.
- b. Research the Health and Safety Code, FSH 6709.11 or other appropriate literature.
- c. Discuss the work project/activity with participants.
- d. Observe the work project/activity.
- e. A combination of the above.

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:

a. Engineering Controls (the most desirable method of abatement). For example, ergonomically designed tools, equipment, and furniture.

b. Substitution. For example, switching to high flash point, non-toxic solvents.

Work Leader

c. Administrative Controls. For example, limiting exposure by reducing the work schedule; establishing appropriate procedures and practices.

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).

e. A combination of the above.

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.

Blocks 11 and 12: Self-explanatory.

Emergency Evacuation Instructions (Reference FSH 6709.11)

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.

Be prepared to provide the following information:

- a. Nature of the accident or injury (avoid using victim's name).
- b. Type of assistance needed, if any (ground, air, or water evacuation).
- c. Location of accident or injury, best access route into the worksite (road name/number), identifiable ground/air landmarks.
- d. Radio frequencies.
- e. Contact person.
- f. Local hazards to ground vehicles or aviation.
- g. Weather conditions (wind speed & direction, visibility, temperature).
- h. Topography.
- i. Number of individuals to be transported.
- j. Estimated weight of individuals for air/water evacuation.

The items listed above serve only as guidelines for the development of emergency evacuation procedures.

JHA and Emergency Evacuation Procedures Acknowledgment

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:

SIGNATURE DATE

SIGNATURE DATE
