

U.S. Department of Agriculture Forest Service #72		1. WORK PROJECT/ACTIVITY Trail construction and maintenance with hand tools	2. LOCATION Green Mountain and Finger Lakes National Forests	3. UNIT All
JOB HAZARD ANALYSIS (JHA) References-FSH 6709.11 and -12 (Instructions on Reverse)		4. NAME OF ANALYST Andrew Clawson	5. JOB TITLE Recreation Technician	6. DATE PREPARED 04/13/2021
7. TASKS/PROCEDURES (List them in the order they will occur)	8. HAZARDS What will happen and to whom? What will be the outcome of exposure?	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls (state if you considered these) Training * PPE Be specific – who needs to do what?		
Provide training	Lack of training/orientation leads to personal injury	<ul style="list-style-type: none"> Project supervisor shall ensure that all workers doing this activity are trained/oriented on the hazards and abatement actions outlined below. Project supervisor shall ensure that all workers be alert to and communicate unanticipated hazards not listed below. Repeat training whenever a new employee or volunteer begins this type of work or when site conditions or work processes change. The general <i>Guide to Working Safely Outdoors</i> on the GMFL (JHA #0) assesses the hazards and abatement actions for work activities to which all employees may be exposed. Personnel shall be familiar with this information. Crew members are trained in the proper use and care of the hand tools required by this work. Only people who have demonstrated their ability to handle a tool safely shall be permitted to work alone with that tool. 		
Pre-job preparations – tool maintenance	Cuts to body (hands). Metal slivers in hands	<ul style="list-style-type: none"> Sharpen all cutting edges. Always wear gloves and protective eyewear when sharpening tools. Prior to filing, fit the file with handle and knuckle guard. When sharpening an axe or Pulaski blade with a stone, work the stone in small circles across and into the blade. Follow sharpening guidelines carefully. Inspect for and remove slivers and cracked handles. Repair or discard tools with bent, broken, or missing parts. Makeshift repairs are not allowed. 		

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Transporting tools	Loose tools in vehicle could become projectiles during a crash causing serious injury or death to vehicle occupants Tools being carried could cause cuts during a slip/trip and fall.	<ul style="list-style-type: none"> • Never transport loose tools inside the same compartment with passengers unless the vehicle is equipped with a cargo net, secured stationary toolbox or tie down straps of sufficient strength to secure tools during a crash. • Tools carried in pickup beds must be strapped down securely or carried in fixed tool boxes. • Pickups used to transport tools should be equipped with a cab guard (“headache rack”) • Have proper sheath/guard on tools when transporting or carrying. • Grasp cutting tools around the shoulder of the handle near the cutting head. • Carry tools blade down. • Carry cross-cut saws on the shoulder, sheathed, with the saw teeth facing away from the neck, and with the rear handle removed. • Carry tools on downhill side so they can be discarded more readily during a fall. • Do not carry tools on shoulder, unless specified in JHA to do so (ex. crosscut saw). • Suspend part of the weight of heavy tools (such as rock bars) on 2” wide nylon webbing strap draped over the shoulder to reduce load and ergonomic injuries to wrists and hands. 		
General lifting, moving heavy objects, and physical exertion	Being in poor physical condition or using improper lifting technique while lifting heavy objects like rocks, logs, and other materials increases the risk of debilitating, lifelong back, joint, or muscular	<ul style="list-style-type: none"> • If possible, begin a physical strengthening program at least 6 weeks prior to beginning trail maintenance work. Focus especially on upper and lower back, abdominal, and wrist, arm, shoulder, knee, ankle strength. <i>If you or crew members have not done this, reduce output expectations for the first few weeks to allow a period of time for physical strengthening.</i> 		

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	injuries that limit your ability to do your job or other life functions. Moving large items like rocks can result in crushed fingers, hands, toes, and feet.	<ul style="list-style-type: none"> • When lifting, keep your head up, back straight, butt down and use your legs to lift. • When lifting, <i>never reach your hands below your knees to begin a lift.</i> Bend knees, squat (<i>squats are hard on knees and difficult for most people to do except for light loads so minimize squat lifts – use kneeling or other methods</i>), kneel one or both knees on ground, or use other methods to lift heavy objects or make repeated lifts. • Keep the load close to your body. • As you lift or set down heavy objects, <i>lift your chin up</i> to help keep your back in its neutral strong position (to avoid rounding your lower back). • <i>Do not rotate torso or knees more than 15° left or right while lifting or carrying a load.</i> Take a step to make a turn. • Roll rocks instead of lifting them wherever possible. • Work slowly to prevent crushing hands and feet. • Wear heavy duty gloves. • Work in teams for heaviest work. <u>Know and do not exceed your personal ability.</u> 		
General trail maintenance and construction	Working on trail construction sites or in brush can result in a variety of cuts, scratches, impact injuries, and eye injury to individual workers.	<ul style="list-style-type: none"> • In addition to tool-specific PPE, wear leather gloves, leather boots, long pants, and long-sleeved shirts while performing trail maintenance. • Whenever using hand tools and/or when leaving a developed trail or shelter site, wear a hardhat in good condition - preferably one with a six point suspension system. Hardhats should have a label that it meets ANSI Z89.1 2003. • Discard old hardhats or hardhats that have been impacted or that show any signs of dents, cuts, discoloration, old age, and/or signs of general abuse. 		

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		<ul style="list-style-type: none"> • Discard hardhats that do not immediately spring back into shape when the sides of the brim are squeezed together. • Never throw tools under any circumstances. • When a tool is not in use, place a guard on any sharp edges and place the tool in a predetermined location, away from personnel. 		
Using chopping, cutting, or grubbing, or digging tools such as Pulaski, axe, mattock, shovel, or grub hoe.	Cuts to self, injury to others caused by lack of PPE or defective tools. Impact injuries to self or bystanders from flying tool parts, sticks, chunks of soil, rock fragments, etc. Glancing blows with cutting tools cause serious cuts to self. Using the wrong tool can cause tool breakage or personal injury.	<ul style="list-style-type: none"> • Keep tools sharp to work efficiently. • Never hit a cutting tool with a striking tool. • Wear leather gloves. • Wear protective eyewear stamped or labeled as meeting ANSI Z89.1 standards when sharpening and using tools. • Keep a minimum of 10 feet distance between tool user and others while swinging hand tools. • Remove overhead obstructions like branches. • Remove bystanders from work area or stop work to allow them to pass. • Use a tool only for its intended purpose. <p><u>Special precautions for chopping tools:</u></p> <ul style="list-style-type: none"> • To minimize the risk of lower leg injuries when chopping, tool handle should not drop below parallel to ground unless chopping from behind a log. • To prevent glancing, keep the striking angle of the tool head almost perpendicular to the tree trunk. • Wear foot and shin/leg guards (use lightweight plastic type that is easy to remove and carry). • Follow chopping guidelines in JHA for Ax and Crosscut saw use. Ensure that proper chopping techniques are demonstrated to crew. 		

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Removing light brush and herbaceous plant growth with weed whips etc.	Cuts to shins result from lack of PPE and improper cutting or chopping techniques	<ul style="list-style-type: none"> Required PPE includes: <ol style="list-style-type: none"> Gloves Protective eyewear meeting ANSI standards Shin guards Ensure that weed whip blades and heads are tight with no loose bolts, etc. Keep weed whip users at least 20 feet from others. 		
Using striking tools such as hammers, sledges,	Eye injuries to user or bystanders due to high speed wood chips, steel shards from tool heads, nails etc.	<ul style="list-style-type: none"> Tool user must wear leather gloves. Tool user and all nearby workers must wear safety glasses that meet ANSI standards. Remove other bystanders away from work area or stop work to allow them to pass. Check handles for cracks and flaws to prevent breaking. Ensure that all tool heads – ax, hammer, Pulaski, sledge heads, are tight. Any tool with loose parts must be removed from service immediately until it is repaired. Makeshift repairs are not allowed. 		
Using prying, digging, or tamping tools such as Peavies, rock bars, pry bars, tamping bars.	Bent tools can rotate under strain causing serious impact injury to tool user(s) Back injuries due to bending torso while exerting force on tool.	<ul style="list-style-type: none"> Remove bent bars from service immediately. Keep back straight while pushing or lifting on tool. Do not rotate torso while lifting or pushing on tool. 		
Using chainsaws, crosscut saws, powered pole pruners		Refer to specific JHAs for these tools.		

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Emergency response	Lack of emergency response plan causes delays in obtaining emergency medical treatment	<ul style="list-style-type: none"> • Have a First Aid kit at the work site and in each vehicle. • Notify the project leader of any injury or incident and complete the necessary injuries reports. • Document the following information on the tailgate safety meeting form attached below for each work location and ensure that all crew members have this information readily available: <ol style="list-style-type: none"> 1. Means of communication (radio, cell, satellite) 2. Primary contacts (rescue squad, F.S. dispatcher, relay person) 3. Travel routes for emergency responders 4. Location of closest medical facilities 5. How to contact them (phone #s) • Keep a two-way radio or cell phone available in case of an emergency and a fully stocked crew type first aid kit on site. • Be able to describe crew location to emergency medical responders. Contact them prior to starting work in case directions are difficult to give to an E-911 operator. • All crew members should have access to a map and directions to the nearest medical facility and the location of the crew vehicle keys. Do not attempt to transport someone with serious injuries. Call emergency responder for this kind of transport. • Avoid working alone. If you are working alone, leave a specific itinerary with another person. 		
10. LINE OFFICER SIGNATURE		11. TITLE <p style="text-align: center;">Forest Supervisor John A. Sinclair</p>		12. DATE

Previous edition is obsolete

Appendix 17 – GMFL Safety and Occupational Health Plan

JHA #72

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.
- 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
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PROJECT/ACTIVITY LEADER TAILGATE SAFETY MEETINGS

Instructions

To be completed by project leader at the worksite prior to beginning job and when the hazards change due to a change in worksite location or other condition. If this is a one-person job or activity, you are the project leader. Add any hazards that do not appear on the FS6700-7, Job Hazard Analysis. List sources reviewed (JHA, Health and Safety Code Handbook, past experience, general safety/situational awareness guides, etc.)

Project/Job/Activity _____ Project/Activity Leader _____

Others attending: _____

Describe Work: _____

Identify & list hazards; hazard reducing work procedures discussed with crew: _____

Protective Equipment Required by JHA: _____

Additional protective Equipment Needed: _____

Start of Project (date) _____

To be filed at end of project in Tailgate Meetings file in your organization's office.

Signature of Project/Activity leader: _____

Date Discussed with Crew: _____