

Appalachian National Scenic Trail		1. WORK PROJECT/ACTIVITY Chainsaw Operations	2. LOCATION Trail Wide	Includes work performed on lands of National Park Service, and various states' 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 07/10/2023
Required Standards and General Notes	Must hold current saw certification and be current with CPR and First-Aid certification in order to perform activities. Sawyers may not operate beyond certified skill level. Sawyers have the obligation to say "no" and walk away from any situation determined to have unacceptable risk. Additional resources include the OHLEC planning logic.			
Required Personal Protective Equipment	Hard hat, Hearing Protection, Long pants, Chaps, Gloves, Eye protection, and Cut-resistant or leather, laced boots that provide ankle support and nonskid soles. Refer to additional PPE that may be associated with specific tasks or activities below.			
Tools and Equipment	Chainsaw, Loggers first aid kit, 3-5 lb. single bit Axe with sheath, Plastic Wedges, Bar cover/guard, Fuel in approved safety container, Bar Oil, Srench.			
Required Training	USFS Thinking Sawyer Chainsaw Safety Training or NPS Chainsaw Training, First-Aid; CPR, TrailSafe! (Operational Leadership) Training			
Required Saw Safety Features	Chain brake, throttle interlock, chain catcher, anti-vibration system, spark arrestor screen			
Additional Equipment	Chain file with handle and guard, Spare bar and chain.			
7. TASKS/PROCEDURES		8. HAZARDS, POTENTIAL HAZARDS / INJURY SOURCE	9. ABATEMENT ACTIONS OR PROCEDURES Engineering Controls * Substitution * Administrative Controls * PPE	
Pre-Operation Inspection		Injury Due to Lack of Training	<ul style="list-style-type: none"> Prior to operating chainsaw sawyers are required to take the following trainings: <ul style="list-style-type: none"> USFS Thinking Sawyer Chainsaw Safety Training or NPS Chainsaw Training. First-Aid; CPR TrailSafe! (Operational Leadership) Training. Use universal precautions - treat all human body fluids as if they were known to be infectious. 	
		Injury from lack of inspection	<ul style="list-style-type: none"> If not familiar with saw to be used, review the owner's operational manual. Ensure all covers on the chainsaw are in place and secured, and all screws and bolts tightened. Check that all fluid reservoirs, caps, hoses or connections (such as for fuel, oil, and chain lube) are properly seated and free of leaks? Ensure the muffler in place and free of damage or deterioration. Ensure the chain sharp, and free of damage. Ensure the chain is set and maintained at the correct tension, per manufacturer's recommendations. Ensure there is adequate chain lube in the reservoir. Ensure the chain in use is compatible with the chainsaw being used. Ensure there is a tip guard in place on the saw (where equipped). Ensure the chain brake functioning (where equipped). Ensure the guide bar for the chain is free of excessive wear, burrs, warpage, build-up of materials, or other damage? Ensure all the switches (throttle lock, kill switch) function properly. 	

Transporting Fuel in the Field	Injury / Exposure to Fuel	<ul style="list-style-type: none"> ● Fuel may only be “field transported” and used in: <ul style="list-style-type: none"> ○ Original manufacturer's container ○ OSHA approved fuel container ○ UL-labeled plastic fuel container ○ Aluminum 1 quart smaller “Sigg” fuel bottle specifically intended to carry fuel. ○ Plastic Dolmar fuel container (Fuel-Mix / Bar Oil) ● Gas and/or Gas Mix fuel containers must be red in color and labeled for its contents and use. ● Ensure fuel cap(s) is secured properly and tightly. ● Do not fill containers above the fill line (or leave at least 2” of space between fuel and top of bottle). ● Do not use fuel container for any other liquid containment. ● Wear eye protection.
Transporting and Maintaining Chainsaws	Cut from chainsaw chain	<ul style="list-style-type: none"> ● Turn off saw and cover bar with sheath when transporting saw a distance greater than 200 feet. Sheath must cover the full length of the bar. ● Walk last in line if you are the person carrying the saw. ● Activate the chain brake when taking more than 2 steps or taking one hand off a running chainsaw. ● Shut down the saw when carrying farther than tree to tree or when slippery surfaces or brush create additional hazards. ● Wear leather gloves always when transporting/maintaining chainsaw chains. ● Wear chaps and gloves when maintaining saw in field. ● When sharpening chainsaw chain, ensure saw is in stable position.
	Burn injury from hot muffler or other parts	<ul style="list-style-type: none"> ● Be aware of muffler and other hot parts when carrying tool after operation. Whenever possible, let tool cool down prior to transporting/maintaining. ● Wear gloves and long-sleeved shirt (recommended).
	Injury to others	<ul style="list-style-type: none"> ● Be aware of and communicate with others around you. ● Do not swing tools around carelessly. ● When necessary, use a spotter to ensure others do not access your workspace and are not injured.
	Injury to hands/fingers	<ul style="list-style-type: none"> ● Take care not to pinch or crush your hands/fingers when picking up and setting down tools.
	Exposure to Fuel	<ul style="list-style-type: none"> ● If not familiar with related fuel SDS, review prior to transport. ● If transporting long distances, empty fuel tank before transport. ● If transporting short distances, ensure fuel caps are tightly secured. ● If exposed to fuels, follow related SDS guidance for treatment.

	Injury to Back / Muscle Strain	<ul style="list-style-type: none"> ● Use proper lifting technique when carrying tool, lift with your legs, not your back. ● Use pack frames, wheelbarrows, handcarts, etc. to transport tool when possible. ● Do not carry more weight than you can handle comfortably, seek assistance if necessary. ● Take frequent breaks, switch-off with co-workers often.
Fueling / Refueling Chainsaws	Fire Hazards	<ul style="list-style-type: none"> ● Turn off the equipment while fueling. ● Keep sparks and open flames away when refueling equipment. ● Avoid spilling gas by using a fuel funnel. ● Do not overfill. ● Allow fuel spills to dry up before operating equipment. ● Use the type of fuel recommended in the instructions or on the label on equipment.
	Exposure / Inhalation / Ingestion of Fuels / Fumes	<ul style="list-style-type: none"> ● If not familiar with related fuel SDS, review prior to fueling. ● Running equipment produces carbon monoxide (CO) poisoning from the toxic engine exhaust. ● Fuel/Re-fuel in well-ventilated area. Do not use indoors, in a garage, or within 20 ft of an occupied building. ● Wear eye protection. ● Wash hands after handling fuel/fuel container ● Remove/replace clothing if exposed to fuel. ● If exposed to fuels, follow related SDS guidance for treatment.
Starting Chainsaws	Kickback Cuts	<ul style="list-style-type: none"> ● There are two recognized methods for safely starting a saw: <ul style="list-style-type: none"> ○ On Ground Starting - Saw should be firmly set on stable ground or otherwise firmly supported. ○ Stand Starting - Saw should be braced between the legs for stability. ● Drop Starting is prohibited. ● Ensure the area is clear of people, debris, and hazards. ● Start the saw with the chain break on. ● Keep a secure grip on the saw at all times. ● Always wear full PPE.
Situational Assessment	Injury through poor assessment	<ul style="list-style-type: none"> ● A sawyer will not work alone. ● Consider your condition, fatigue, experience, comfort level. ● Analyze the cutting area by considering: location of people, structures, power lines, and other obstacles.

		<ul style="list-style-type: none"> ● Identify travel routes in the cutting area. Consider topography and steep ground. ● Identify nearby hazards such as trees, low-hanging and dead limbs, rocks, brush: moisture (rain, snow, ice). ● Define primary and secondary escape routes and safe zones. ● Know: wind direction and velocity, tree species - both alive and dead, diameter (and height) of trees. Soundness of tree. Lean direction. Widow makers. ● Look up and around often. ● Through your assessment, develop a plan for the proposed scope of work and communicate the plan with co-workers around you.
Bucking and Limbing	Injury from bucking and limbing	<ul style="list-style-type: none"> ● Develop bucking/limbing plan. Communicate plan with coworkers. ● Know where bar tip is at all times. ● Ensure stable footing. ● Anticipate binds / tension and compression and plan mitigation. ● Initiate cut slowly to observe/read bind. ● Use caution when cutting limbs that support logs off the ground. ● Avoid finishing cuts from the downhill side. ● On steep ground, try to prevent bucked sections from rolling or sliding. Do not buck logs on steep slopes with people below. ● Limb from the top of large logs. ● Carefully relieve tension on saplings and limbs (spring poles) with a series of small cuts to the compression side. ● Never cut with powerhead above shoulders. ● If bucking situation deemed unsafe, use alternate method or cancel task. ● Sound warning for all objects moving downhill. ● Always wear full PPE.
	Injury from working too closely together	<ul style="list-style-type: none"> ● Space activities so one will not create a hazard for another. ● Ensure adequate traffic control measures are taken on trails. ● Develop communication strategy. ● Always stop the saw to let visitors pass. Use spotter when feasible.
Felling	Injury from inadequate planning/preparation	<ul style="list-style-type: none"> ● After determining the project scope and assessing the tree and its condition, develop a felling plan and communicate plan with co-workers. ● Clear the escape routes and work area, walk out and check the intended lay. ● Sawyer must have appropriate certification for felling. ● Ensure you have enough support (i.e. swampers/spotters) for scope of work. ● Temporarily close off access to the public if necessary, and position spotter/guards.

	Injury from felling	<ul style="list-style-type: none"> ● Before initiating undercut, warn nearby personnel that a tree is about to fall. ● Undercut must be clean, no dutchman, and an opening large enough to control the tree to the ground. ● Warn bystanders before beginning back cut and as tree falls. ● Insert a wedge into the backcut as necessary. ● Maintain adequate hinge wood for type of undercut used. ● As the tree commits to the undercut, watch the top as you quickly move away from the stump. ● If the tree moves in a direction that compromises your primary safety route, use the alternate. ● Watch for falling tops and limbs for at least 30 seconds. Give an "All Clear!" shout when it is safe for personnel to return to cutting site. ● Do not leave a partially cut tree without the marking the safety circle and warning others. ● Do not fell during high winds, electrical storms, or other hazardous weather. ● Do not conduct felling if the top of the tree, intended lay, or escape route is obscured by darkness, smoke, fog, or any other obstruction, or when wind can affect the control of the fall of the tree. ● When situations are deemed unsafe, alternate methods shall be used or the task cancelled. ● Always wear full PPE.
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10. OFFICIAL SIGNATURE Kurt Speers	11. TITLE Acting Chief Ranger / CDSO	12. DATE
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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.
- 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
