

Job Hazard Analysis - Form 1 – page 1

JOB HAZARD ANALYSIS (JHA)		Date: August 14, 2008	
Park Unit: North Country National Scenic Trail			
JOB TITLE: Chainsaw Operations		JHA Number: NOCO-06	Page 1 of 7
Job Performed By: Various VIPs	Analysis By: Daniel W. Watson	Work Supervisor: Various	Approved By:
Required Standards and General Notes:	Chainsaw Operators must have successfully passed saw operator training (Level to be determined by NPS) and be documented as an approved chainsaw operator. Chainsaw operations should always involve two people for safety enhancement. Sawyers and swampers maintain CPR/First Aid training		
Required Personal Protective Equipment:	Hard Hat w/ full face shield, Hearing Protection, Leather or other sturdy Work Gloves, 8” High Non-Skid Sole Leather Boots, Saw Chaps, Weather-Appropriate Shirt & Long Pants * Swampers also required to wear identified PPE, minus chaps (Hard hat with suitable eye protection may be substituted for full face shield)		
Tools and Equipment:	Chainsaw, Saw Kit, Fuel & Bar Oil, First Aid Kit, Cellular Phone or Two-Way Radio		
Sequence of Job Steps		Potential Hazards/ Injury sources	Safe Action or Procedure

1. General Chainsaw Operations		
a. Certification/Training	Various potential injuries due to operating saw outside of skill/training level	Complete approved chainsaw operator training (S-212, etc.); Adult First Aid & CPR certification
b. Tailgate Safety Session	Site-Specific Hazards	Identify site-specific hazards associated with each saw operation, mitigate hazards or stop work until safety concerns are addressed
c. Fueling	<p>CBY = Fire from gas spilled on muffler or other ignition source</p> <p>E = Chemical burn from spilled gas (eyes, skin)</p>	<ul style="list-style-type: none"> i. Let saw cool before refueling ii. Fuel on bare ground, use funnels iii. No smoking during refueling iv. Move at least 10 feet away from fueling site before starting saw v. Stay 20 feet away from ignition sources when fueling vi. Replace excessively gas/oil soaked gloves vii. Read, be familiar with MSDS sheets for fuel/oil viii. Mix fuel in well ventilated area ix. Clean up spills promptly x. Use labeled containers
d. Saw Maintenance	O = Fatigue/injury from improper saw operation	<ul style="list-style-type: none"> i. Wear gloves, eye protection, other PPE ii. Remove contaminated clothes/gloves; immediately wash exposed areas with soap and water
e. Sharpening Chain	CBY = Cuts to hands	<ul style="list-style-type: none"> i. Keep saw sharpened ii. Keep idle adjusted properly iii. Inspect for bar wear/proper chain tension
f. Transporting Saw	FS = Injury due to falls while carrying saw	<ul style="list-style-type: none"> i. Wear gloves when sharpening chain ii. Use vise if available iii. Never file chain while saw is running
		<ul style="list-style-type: none"> i. Always employ chain guard whenever saw is not in operation ii. Point bar forward when moving downhill, with saw at side iii. Point bar to rear when moving uphill, with saw at side

<p>d. Felling *Size Up</p>	<p>CI = Rot on stump affecting holding wood/wedgeing</p> <p>SB = Struck by weak snags, widow makers, etc.</p> <p>CBY = Wind gust, or misreading lean adversely affecting felling—sit back & loss of control</p> <p>FS = Tripping due to poor escape route</p>	<p>v. Use wedges and or pie cuts vi. Assess all possible binds before cutting vii. Block material before bucking if potential for it to roll viii. Do not cross over with saw—limb on same side as saw ix. Know where tip of bar is at all times</p> <p>i. Check for soundness with felling axe, listen solid or spongy sound ii. If needed/possible, bore tree and examine sawdust color/texture for rot</p> <p>i. Look up in the tree for widow makers, conk, slipping bark, and other hazards/indicators ii. Walk out intended lay iii. Wear hard hat/PPE</p> <p>i. Determine predominant lean—check head/side lean, wind direction/speed, slope ii. Use plumb bob to check at least two locations, at right angles iii. Use correct type/sizes of wedges</p> <p>i. Establish primary and secondary escape routes at 45 degrees away from tree stump ii. Walk out both escape routes, and where the tree is to be felled—look for hazards such as snags, down logs, rocks, stumps, low hanging limbs, etc.</p>
<p>e. Felling *Securing Felling Area</p>	<p>SB = Others being struck by trees/limbs/debris</p>	<p>i. The faller has the responsibility and authority to identify, secure, and manage the felling area ii. A MINIMUM OF 2-1/2 TIMES THE HEIGHT OF MATERIAL BEING FELLED IN ALL DIRECTIONS MUST BE SECURED iii. No one is allowed inside secured felling area without authorization of the faller iv. Additionally, the entire downhill side will be included in the secure area on hillsides with steep slopes where material can roll for long, unpredictable distances</p>

<p>f. Felling *Making Final Cuts</p>	<p>SB = Struck by tree or cut by saw</p>	<p>v. Establish a safe zone outside secured area where everyone remains until felling is completed and the faller signals “all clear” vi. Appoint one person to maintain communication between the feller and others in safety zone so that nobody enters the secured falling area without permission vii. Position lookouts on all trails and roads entering the secured felling area viii. Before leaving the secured felling area, the faller must ensure that no hazards remain such as hang ups, unstable logs, or other dangers ix. It is the responsibility of the work leader and other volunteer workers to understand and follow these established standards, and to follow the direction of the faller</p> <p>i. Make the horizontal cut of the face 1/3 the diameter of the stump ii. Use gunning site to line up direction of fall iii. Always match the sloping cut and horizontal cut together—do not cross and create a “Dutchman” iv. Clean out the undercut v. Maintain a minimum 2 inch stump shot (i.e.: make the back cut 2 inches higher than the horizontal cut) vi. Look up as you make all cuts to tree vii. Use wedges on all back cuts unless the tree has a heavy lean, or the tree is too small to insert wedge viii. Use adequate felling axe to drive wedge ix. Always look up each time wedge is driven into tree x. Be aware of wind direction & speed xi. Always leave a minimum of 2 inches of holding wood across the stump (depending upon tree size) xii. Do not cut corner wood xiii. Always give warning shout before starting back cut xiv. Exit using appropriate escape route at first sign tree is committing to the face xv. Lay down saw clear of stump area & keep moving toward safe area xvi. Get behind large, sound tree if possible</p>
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		xvii. After all material has hit the ground, look up for potential hazards created (broken limbs/tops) that may still fall to the ground xviii. Cautiously move back to the stump after movement has stopped xix. Faller determines when area is safe, gives the all clear sign xx. Take opportunity to evaluate/discuss the stump for lessons learned
3. Saw Certification & Working within the Felling Area	Other crew members observing felling procedures	i. Make sure all trainees are aware of which tree is to be felled and what direction it is planned to fall ii. Point out identified hazards from size up iii. It is the faller's discretion to allow trainees within the 2-1/2 tree lengths to observe felling, but regardless, maintain safe distance and established escape route iv. All observers must remain quiet during felling

Injury Source for the middle column: SB= Struck By, SA = Struck Against, CBY = Contacted By, CI = Caught in, CB = Caught Between, CO = Caught On, FB = Fall to Below, CW = Contacted With, O = Overexertion or Repetitive Motion, FS = Fall at the Same Level, BR = Bodily reaction E = Exposure to Chemical, Noise etc.

JHA - CONTINUATION SHEET		JHA Number:	Page ____ of ____
Sequence of Job Steps	Potential Hazards/Injury Source	Safe Action or Procedure	

4. Medical Emergencies	Insect stings, allergic reactions, personal injury	<ul style="list-style-type: none"> i. Watch for bee nests or swarms while walking, cutting, and after tree is felled ii. Those with known allergies to bee stings should carry their own sting kit, tell others of their allergy and show others how to use kit iii. All sawyers & swampers will maintain current First Aid/CPR training, and all saw work will be performed by sawyer/swamper buddy-system teams iv. First Aid kit on site during all felling operations v. Communications to request advanced emergency medical treatment must be provided for (cellular phones/radios, etc).
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