

U.S. Department of Agriculture Forest Service	1. WORK PROJECT/ACTIVITY Tree Climbing	2. LOCATION Dorena Tree Improvement Center	3. UNIT
JOB HAZARD ANALYSIS (JHA) References-FSH 6709.11 and -12 (Instructions on Reverse)	4. NAME OF ANALYST Jerry Berdeen	5. JOB TITLE Tree Climbing Workshop Coordinator	6. DATE PREPARED 6/9/04
7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE	
Preparations for climbing	Unprepared personnel	Must be in good physical condition, mentally prepared to climb. Have any necessary medications for allergies available. Have appropriate clothing and footwear, UIAA approved helmet; harness, gloves, sun or safety glasses. Plan for adequate food and water; prepare first aid kit; include "bee-bop". Secure and check hand-held radio for District contact. Sign out at office and provide a copy of climbing site(s) and field evacuation plan.	
Driving to climbing site	Vehicle and traffic	Check gas, oil, water, tires, seat belts, lights, brakes, horn and general condition of body and undercarriage. Clean windshield and mirrors. Be aware of other activities in project area.	
Moving around at climbing site	Injury due to poor footing, plants, animals and insects; snapbacks	Be certain of secure footing and maintain safe walking distance between people, especially when carrying equipment. Watch for stepping in loops formed by lanyards. Be aware of poisonous plants, animal hazards, and insects in area.	
Checking the environment	adverse environment	Do not climb when winds exceed 25mph, or below in strong gusts; if it is not fully daylight or the temperature is too low or high to climb safely; if lighting is likely or it is raining hard enough to create a hazard.	
Checking the tree	Unsafe tree	Check every tree for hazards before and during climbing, and while working in the tree. Avoid trees with hornet or wasp nests, large nesting birds, animals, or any indication of rot. Never climb a tree with powerlines close enough to come in contact with the tree. Be aware of dead branches hanging in the tree and other dead trees leaning against tree to be climbed. Never climb above a fork in a conifer if the fork represents a weak point or is caused by injury.	
Equipment check	Unsafe equipment	Inspect equipment before each climb; ensure that it meets or exceeds National Safety Standards (See National Tree Climbing Field Guide for details). Check for stress, cracks, wear, abrasion, splices and stitching. Never allow equipment to be used for anything other than climbing. Keep equipment stored away from chemicals, sunlight and protect from mice and mildew.	
Climbing on branches	Falls or injury due to breaking, dead,	Always climb with a ground person who is certified to climb and rescue; ground person needs to have ability to rescue climber	

	small diameter or brittle limbs	from any tree. Always maintain 3-point climbing technique using secure surfaces able to support climbers weight. Keep feet, hands and body as close to the bole as possible. Keep ground person informed of your activities in the tree. Limit free climbing to portion of the crown below 4" diameter. Always use lanyard to secure self when stopping to work or rest in tree, and visually check attachment points for proper security. Never move in a hurried fasion.
Climbing/working in tree	Abrasions, cuts and eye injury	Always wear appropriate climbing gear, including a long-sleeved shirt, and gloves when necessary. Do not turn head rapidly; eye protection is required - goggles are advised. Keep legs horizontal while rappelling to avoid scraping against the tree. Keep lanyard above waist level and properly adjusted while spurring; take small steps to avoid spurring-out.
Climbing/working in tree	Injury due to falling limbs, debris and equipment	Ground person should stay away from the base of the tree as much as possible. Equipment should not be placed directly overhead while climbing. Keep climbing helmet adjusted and chin strap fastened. Stay alert to direction of fall when pruning limbs. Never use ladders to knock off limbs.
Equipment use	Damage to rope and equipment, or injury from rapid or improper rappel	Be familiar with equipment use and history. Keep equipment free of pitch and dirt; clean-up regularly. Check ropes frequently for abrasion and fraying. Secure rappel rope and system well below 4" diameter. Angle tree crotch lanyard or rope over 1 or 2 sturdy limbs, not entire whorl. Check any system before removing lanyard and transferring weight to system. Secure all knots, including figure-8 at end of rappel rope. Make sure of sufficient rope length; rappel slowly and smoothly, walking down the side of the bole. Have ground person assist with a belay.
Equipment removal from tree	Injury from rappel system being removed from tree	Climber and ground person should wear climbing helmet at all times. Warn others of intent to remove system from tree. Plan an escape route; watch carefully and stand away from base of tree.
Continuous climbing	fatigue	Climber and ground person should alternate jobs to prevent fatigue. Do not climb when overly tired. Complete tree top work first and move downward. Use haul line rather than carry heavy equipment.
General climbing activities	Strained muscled	Perform stretching excercises prior to starting a climbing assignment; work especially on flexibility. Do not have heavy equipment hanging from harness; transfer this weight to limbs. Use pully system to raise and lower equipment; have ground person do the work of raising and lowering. Minimize the time spent in one position, especially when leaning out. Drink ample water to prevent dehydration and muscle cramps. Use legs to push upward, rather than pulling with arms whenever possible.
Climbing, general	Strangling, lacerations	Never wear anything around the neck, including jewelry, cameras or lanyards. Remove other jewelry such as rings and earrings.

Cone picking or other activities involving small limbs

Falls or injury from breaking limbs or tree top

Always use 4" tie-in system secured below the 4" diameter. Secure to bole a minimum of every 3' to keep a potential fall to less than 6'. Keep body vertical and close to bole in top of tree; do not lean out. Avoid putting too much pressure on any limb; place hands and feet as close to bole as possible.

10. LINE OFFICER SIGNATURE

11. TITLE

12. DATE

Previous edition is obsolete

(over)

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.

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

Blocks 11 and 12: Self-explanatory.

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