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|  | **R6-FS-6700-7 (08/12)** |
| **U.S. Department of Agriculture****Forest Service** | **1. WORK PROJECT/ACTIVITY****Chainsaw Operations - bucking, limbing & felling** | **2. LOCATION**USFS - Forest Wide | **3. UNIT**Region 6 |
| **JOB HAZARD ANALYSIS (JHA)****References-FSH 6709.11 and -12****(Instructions on Reverse)** | **4. NAME OF ANALYST**Back Country Horsemen of Washington | **5. JOB TITLE**BCHW Safety Committee | **6. DATE PREPARED**March 2017 |
| **7. TASKS/PROCEDURES** | **8. HAZARDS** | **9. ABATEMENT ACTIONS****Engineering Controls \* Substitution \* Administrative Controls \* PPE** | **10. POST ABATEMENT****ACTION RISK RATING****(Severity/Probability Matrix)** |
|  | Severity | Probability | Risk Code |
| General Chainsaw Operation---------------------------------------------------------------Personal Protection Equipment (PPE) | Serious potential injury during chainsaw operation to sawyer(s), crew members or public trail users---------------------------------------------------Serious potential personal injury from falling limbs, flying debris, or sharp tools | Maintain Required Qualifications:1. Chainsaw operation certification2. First aid / CPR certification------------------------------------------------------------------------------Operaters are responsible for having proper PPEs: Hard hat, eye protection, hearing protection, gloves, long sleeve shirt, long pants, chaps, and boots Boots must be 8" tall, leather or cut-resistant, with non- skid soles, and have ankle support Chaps must have 2" overlap of boots at hemSee PPE FSH 6709 11,21,13First aid kit located on the jobsiteOSHA standard 1920,266 App. A | I l - Critical-------------III-Marginal | D - Seldom------------D - Seldom | 4- Low--------------4 - Low |
| Tailgate Safety Meeting----------------------------------------------------------------Travel to worksite | Communication between Trail Work Leader and crew members is impotant to avoid injuries---------------------------------------------------Potential injury during transport of chainsaw and sharp trail tools | Trail Work Leader and crew members must participate in a Tailgate Safety Briefing at the start of the project.See Tailgate Safety Briefing form.Crew members MUST fill out Medical Decleration Form.Discuss communication proceeduresDiscuss Emergancy Action Plan (EAP)Discuss tasks and proceedures for the projectSawyers MUST NOT work alone------------------------------------------------------------------------------Use covering sheath for chainsaw bladeUse tool guards for trail toolsUse proper transport for chainsaw and tools carried on trail stockFoot traffic must travel 10 feet apartCarry chainsaw on downhill side of trail, pointing toward the ground and away from your body | IV -Negligible-------------IV - Negligible | E -Unlikely--------------D - Seldom | 4 - Low---------------4 - Low |
| Equipment----------------------------------------------------------------Fueling Safety | Potential injury with use of imporper equipment---------------------------------------------------Potential injury from firePotential injury from fuel and / or vapor geysering  | Follow manufacture''s safety, operation, and maintenace recommendations for chainsaw.Chainsaw must have a good starter cord, chain break, spark arrestor, a good clutch, a chain catcher, and chip deflectorHave on hand an axe, wedges, maul or single bit axe.Have on hand a spare chainsaw chain and a chainsaw wrenchHave approved leak proof containers for fuel and oil------------------------------------------------------------------------------Allow chainsaw to cool at least 5 minutes before refuelingClean debris from fuel and oil tank openingsBe wary of chainsaw fuel tank pressure if tank is more than one-half fullDirect fuel cap in a safe direction before slowly openingFuel from upwind side to reduce exposure to spilled fuel and voporsFill tank on bare ground or other noncombustible surfaceFill tank outdoors and at least 20 feet from open flame or other source of ignitionFill tank at least 50 feet from water sourceImmediately clean up spilled fuelStart chainsaw at least 10 feet from the fueling area | IV - Negligible-------------IV - Negligible | D - Seldom-------------D - Seldom | 4 - Low-------------4 - Low |
| Worksite----------------------------------------------------------------Worksite Safety | Potential worksite injuries must be discussed between Tail Work Leader and trail crew before project starts Overhead hazards Down logs in escape route Brush and limgs in worksite Log movement during cutting Slippery and uneven worksite---------------------------------------------------Potential worksite injuries must bediscussed between Trail Work Leader and trail crew throughout the project Log movement during and after  cutting Cutting piece track after cuttingPotential personnel injury from rain, snow, and / or wind cinditions | Make a worksite hazard assesment prior to sawingCheck for overhead hazards and NEVER work under overhead hazzardsDetermine escape routes Clear area work site of hazardsPay close attention to footingPost llokouts to alert trail users moving through area------------------------------------------------------------------------------Space workforce so the activities of one will not create a hazardWorkers not essential for the project must keep outside the safety circleHave workers work on the same contour rather than some working above othersDo not saw in the dark or under hazardous weather conditions | IV - Negligible-------------IV - Negligible | D - Seldom-------------D - Seldom | 4- Low-------------4 - Low |
| Chainsaw Starting Safety----------------------------------------------------------------Chainsaw Operation Safety | Serious potential personnel injury during improper chainsaw operation starting techniques ---------------------------------------------------Serious potential personal injury during improper chainsaw operation  | When starting chainsaw make sure that the bar is clear of all obstructionsEngage chain brake before starting chainsawStart chainsaw with one of the following proceedures:1. Place chainsaw on the ground and hold firmly with one hand and a foot in the handle while pulling the starter rope with the other hand2. Place the handle of the chainsaw between your legs above your knees, hold firmly with your legs and one hand while pulling the starter rope with your other hand3. Place the chainsaw bar over a stump or log while holding the handle with one hand and pulling the starter rope with the other handAir drops and/or throw starts are NOT allowed------------------------------------------------------------------------------Have your thumb wrapped around the chainsaw handle at all times during cutting.NEVER rise the chainsaw blade above your shoulderKeep your head away from the path of the chainsaw bar in case of a kickback occuresWhen not cutting always have the chain brake onShut down chainsaw when carrying from worksite to another worksiteLet chainsaw cool before carrying between worksites | IV - Negligible-------------IV - Negligible | E -Unlikely-------------E -Unlikely | 4 - Low--------------4 - Low |
| Chainsaw Operating SafetyCut Plan \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Communications | Severe potential personnel injury during improper chainsaw sawing techniques Binds trapping chainsaw blade Log drop when cutting limbs Rolling log pieces Splintering sapllings and limbsNot notifying a NO-GO deciissionHazardous trail conditions left for other trail usersSerious potential personnel injury during chainsaw sawing from unplanned log movement---------------------------------------------------Critical information in case of an injury | Anticipate log tensions and compressions, then plan mitigationUse caution when cutting limbs supporting logs off the groundDo not saw on the downhill side of a logDo not saw logs on steep slopes with workers belowCarefully relieve tension on saplings and limbs before cuttingAsses all potential hazards using GO/NO-GO checklistNever leave a hazardous situation, such as a half cut or hung up logMitigate cut sequences for potential binds based on bearing points and lie of logDetermine mechanics of removing the cut piecesExecute cut plan Brief swampers Remove springpoles first Observe kerf closely to determine if behavior of log corresponds to perdicted bind Insert wedges on compression side as soon as  possible----------------------------------------------------------------------------Trail Work Leader must have a Trailhead Communication Plan (TCP) and an Emergancy Action Plan (EAP) for the trail crew.If trail crew divides into multiple teams, a copy of the TCP and EAP must accompany each team.Two-way radiios and / or mobile phones for communication between seperated teams.Check in and check out before and after project in accordance with TCPIf an EAP is acctivated contact BCHW and land management agency. | IV - Negligiblel l - Critical--------------lII - Marginal | E -UnlikelyD - Seldom--------------D - Seldom  | 4 - Low3 - Medium--------------4 - Low |
|  Felling OperationsSecuring Felling AreaFelling Plan | Serious potential injury to sawyer, crew or public trail usersStruck by snags, down trees, widow makersRot on the stump affecting holding woodTripping/struck due to poor escape routeSerious potential injury to sawyer, crew or public trail usersPotential fatal injury to sawyer, crew or public trail usersSerious potential injury to sawyer , crew or public trail usersPotential fatal injury to sawyer, crew or public trail users | Size Up (Situational Awarness)From a short distance, walking 360 degrees around tree, look up for widow makers, conk, slipping bark. Don’t move from the escape route towards the felled tree until all movement has stopped.Detect solid or sponge wood by “sounding” with falling axe. If needed bore into stump looking for coloring in the sawdustAlways look for and clear out escape routes 45 degrees away from tree. Walk out both the escape route and where the tree is to be felled looking for such hazards as snags, down logs, jill pokes, rocks, stumps, hang ups and low hanging limbsRefer to Situational Awareness/Individual Complexity FormThe faller has the responsibility and authority to identify, secure, and manage the felling area. A MINIMUM OF 2-1/2 TIMES THE HEIGHT OF MATERIAL BEING FELLED IN ALL DIRECTIONS MUST BE SECURED. No one shall be allowed in the secured felling area without the authorization of the fallerIn addition on the entire downhill side will be included in the secure area on hillsides with steep slopes where material can roll for long and unpredictable distances A safety zone will be established outside the secured area and everyone must remain there until all felling is completed and the "all clear" has been given by the fallerOne person shall be appointed and responsible to maintain reliable communications with the faller and the crew members in the safety zone to ensure nobody enters the secured falling areaA road or trail guard will be set up on all roads and trails entering and leaving the secured felling area Effective communications must exist between the guards and the fallerBefore leaving the felling area the faller needs to ensure that no hazards remain such as hang ups, unusable logs, or other dangersTo protect the lives of employees, contractors, and the public it is the responsibility of the faller to see that these standards are firmly adhered to It is the responsibility of the supervisors and all employees engaged in chainsaw operations to understand and follow these established standards--------------------------------------------------------------------Make the horizontal cut of the face 1/3" the diameter of the stumpAlways match the sloping cut and horizontal cut together, use 2" stump shot (this means make the back cut 2" higher than the horizontal cut Look up as you make all cuts to treeUse a wedge on all back cuts unless the tree has a heavy lean, or the tree is to small to insert a wedge.Use adequate felling axe for fellingAlways lookup after each time of wedge has been driven into treeBe aware of wind direction and speedAlways leave a minimum of 2" of holding wood across the stump.(DEPENDING ON THE SIZE OF TREE BEING FELLED AND OR CONDITION OF TREE BEING FELLED) Do not cut corner woodAlways give a warning shout before you start the back cut, NEVER BE AFRAID TO SAY NO |  I - Catastro-phic l –Catastro-phic---------------- I - Catastro-phic | D -SeldomD –Seldom----------------D –Seldom | 2 -High2 –High----------------2 –High |
| **10. LINE OFFICER SIGNATURE** | **11. TITLE**BCHW President | **12. DATE**      |
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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 official approving the JHA. The official 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 suspected 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 Leaderc. 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 values for Severity, Probability and the overall Risk Assessment Code (RAC) will correspond to the Risk Management Matrix. When completing this form using a computer, simply use the pull down feature to populate these cells. If completing by hand, use the Risk Matrix to determine these values.**Block 11**: The JHA must be reviewed and approved by the appropriate manager / supervisor as identified in the Risk Decision Authority Matrix.**Blocks 12 and 13**: 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.**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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