

U.S. Department of Agriculture Forest Service  <b>#31</b>		1. WORK PROJECT/ACTIVITY  Operating Chainsaws – Bucking, Limbing, and Felling	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 ANALYSTS  David J. Haberl	5. JOB TITLE  Chainsaw C Evaluator Forester	6. DATE PREPARED  04/12/2021
7. TASKS/PROCEDURES (List them in the order they will occur)	8. HAZARDS What will happen and to whom under what circumstances?	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"> <li>• Project supervisor shall ensure that all workers doing this activity are trained/oriented on the hazards and abatement actions outlined below.</li> <li>• Project supervisor shall ensure that all workers be alert to and communicate unanticipated hazards not listed below.</li> <li>• Repeat training whenever a new employee or volunteer begins this type of work or when site conditions or work processes change.</li> <li>• 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.</li> <li>• Chainsaw operators shall ensure that they are certified through the National Recognized Sawyer Training Courses (e.g., S-212 or MTDC Chainsaw Training Course, or Game of Logging) and are currently certified in First Aid, CPR.</li> <li>• Conduct complete recertification for all sawyers every three years. [See Health &amp; Safety Code Handbook, R9 Addendum to FSH6709.11; Section 22.48-Qualifications (2) and (3)] Duration of class shall be from 8 to 16 hours and shall cover, at minimum, the following topics:                         <ul style="list-style-type: none"> <li>○ Each sawyer must demonstrate that their current sawyer class certification can be performed.</li> <li>○ New techniques, equipment, job hazard analysis, lessons learned, and field exercise demonstrating sawyer proficiency.</li> <li>○ Discussion of current Forest Service policy and administrative requirements.</li> </ul> </li> <li>• Conduct “field based” annual refresher to include, at minimum:                         <ul style="list-style-type: none"> <li>○ Saw handling techniques</li> <li>○ Felling techniques</li> </ul> </li> </ul>		

		<ul style="list-style-type: none"> <li>○ Hazard determination and abatement</li> <li>○ Lessons learned</li> <li>○ Job hazard analysis</li> </ul>
<p>Pre-Work Meeting with crew</p>	<p>Sawyers can be injured if they are improperly prepared or briefed on the jobsite prior to beginning work.</p>	<p><b>Project supervisor shall ensure that:</b></p> <ul style="list-style-type: none"> <li>● All sawyers have the required PPE:             <ul style="list-style-type: none"> <li>○ A hard hat in good condition. Preferably with a 6 point suspension system. Full system chainsaw helmets with face screen and ear muffs are preferred. Meets ANSI Z89.1 standard.</li> <li>○ Chainsaw cutters hats having earmuff protection rated at 27dbA NRR or better AND formable i.e., “Pillowsoft” earplugs under the muffs.</li> <li>○ Eye protection - either the screen on the full system chainsaw helmet or wrap around safety glasses that meet current z87.1 ANSI standards. <i>Although not required, wearing safety glasses in combination with face screen is recommended.</i></li> <li>○ Chainsaw chaps in good condition preferably rated for protection from chain speeds up to 3200 feet per minute meeting Forest Service Specification 6170-4, or ASTM F-1897 for non-fire applications. Chaps must extend at minimum 2” below the top of boot.</li> <li>○ Heavy duty, cut resistant or leather, water proof or water repellant, 8-inch high, laced boots with non-skid soles and adequate ankle support.</li> <li>○ Long sleeve shirt preferred, however short sleeve shirt can be worn in lieu of long sleeve when appropriate such as when high environmental temperatures are deemed a significant hazard in non-fire applications.</li> <li>○ Slip resistant gloves appropriate for weather conditions. Cut resistant gloves and mittens are available for added protection.</li> <li>○ First Aid Kit with supplies that are suitable for serious cuts at least equivalent to Forest service type IV Kit. Belt-mounted trauma pad, tourniquet designed for single handed operation, and quick clot is also recommended.</li> </ul> </li> <li>● No one operates a chainsaw alone, unless confronted with an unavoidable situation like an unexpected blow down blocking vehicles, in which case the solo operator must make contact with Dispatch, Supervisor, or Ranger, and follow up with a 15 minute check-ins</li> </ul>

		<ul style="list-style-type: none"> <li>• Make contact by radio or cell phone with supervisor or District Ranger to inform them you are going to operate the saw. Check back in when finished. (Stay informed on current GMFL Dispatch protocol)</li> <li>• Everyone has reviewed and understands material in this JHA.</li> <li>• Tailgate safety sessions are conducted at start of each project or when working conditions change.</li> </ul>
<p>Emergency response</p>	<p>Lack of emergency response plan causes delays in obtaining emergency medical treatment</p>	<ul style="list-style-type: none"> <li>• Prepare the following information for each project site prior to arrival at work site, document on your tailgate safety meeting form, and share with all project participants:             <ol style="list-style-type: none"> <li>1. Means of communication (radio, cell, satellite)</li> <li>2. Primary contacts (rescue squad, F.S. dispatcher, relay person)</li> <li>3. Travel routes for emergency responders</li> <li>4. Location of closest medical facilities</li> <li>5. How to contact them (phone #s)</li> </ol> </li> </ul> <p>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.</p> <p>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.</p> <p>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.</p>
<p>Pre-operations check/equipment maintenance.</p>	<p>Improper maintenance or failure to inspect chainsaw for deficiencies before operation can lead to injury. Failure to wear leather gloves can lead to jagged cuts.</p>	<ul style="list-style-type: none"> <li>• Wear leather gloves while working on saw.</li> <li>• If saw is hot, let it cool down before working on it.</li> <li>• Chainsaws must have an operating chain brake, anti-vibration system and working throttle interlock.</li> <li>• .Chain catcher shall be intact and in place.</li> <li>• All bolts should be checked for tightness.</li> <li>• Engine should be maintained and running well.</li> <li>• Intact muffler with clean spark arresting mesh securely fastened in place</li> <li>• Guide bar should be in good shape, not bent or worn. Be sure bar oil system is working properly.</li> </ul>

		<ul style="list-style-type: none"> <li>• Chain shall be tensioned properly and have sharp cutters and depth gauges filed to proper height. Files shall have a handle. Cut resistant gloves shall be worn when filing.</li> <li>• Tools and supplies needed for field maintenance and operations should be on hand: Srench, extra spark plug, axe and wedges.</li> <li>• Chainsaw and bar should be of appropriate size for work.</li> <li>• Follow manufactures maintenance guidelines for your saw.</li> </ul>
<p>Transporting fuel and fueling saw</p>	<p>Fuel Geysering</p> <p>Transporting fuel inside vehicle passenger compartment directly potentially exposes occupants to toxic vapors, explosion, or fire.</p> <p>Spilling fuel or fueling saw while it is still hot can result in gasoline “flashing” resulting in serious burns to person fueling saw.</p> <p>Skin irritation and eye injury can result from spilled or splashed fuel.</p> <p>Inhalation of gasoline vapors can irritate respiratory system and possibly cause cancer.</p>	<ul style="list-style-type: none"> <li>• Always use manufacturer recommended Octane level (e.g., 90+ Octane)</li> <li>• Never carry flammable products inside vehicle passenger compartments.</li> <li>• Use DOT II Transport safety cans for transporting fuel (fuel can be transferred to a “combination” can (mixed fuel and bar oil can).</li> <li>• Use clearly labeled (mix ratio, when mixed, who mixed it) and approved gas and bar oil containers.</li> <li>• Store flammable fuels in safety cans or use fuel bottles made specifically for holding flammable fuels.</li> <li>• Stop saw and allow it to cool off before fueling.</li> <li>• Wear safety glasses meeting current Z87.1 ANSI standards.</li> <li>• Mesh-type eye protection is not permitted for use when refueling, even if it meets Z87.1 ANSI standards. Polycarbonate type safety glasses must be used.</li> <li>• Refuel outdoors or on a non-combustible, non-static surface, and away from potential ignition sources. Clean spilled fuel off the saw.</li> <li>• Fuel from the upwind side to reduce exposure to spilled fuel and cancer-causing vapors.</li> <li>• Never start the saw within 10 feet of the refueling area, in buildings or vehicles. Avoid contamination of clothing or PPE with flammable liquids.</li> <li>• Wash gas off skin and gas-contaminated clothing as soon as possible.</li> <li>• Firmly hand-tighten/close chainsaw gas and bar oil caps.</li> <li>• Do not smoke while fueling or operating chainsaws.</li> <li>• Fill fuel cans only to 90% of capacity to allow for expansion.</li> </ul>
<p>Transporting chainsaws in vehicles</p>	<p>Improperly securing a chainsaw while transporting in a vehicle may cause the saw to become a projectile, potentially injuring vehicle occupants or damaging the</p>	<ul style="list-style-type: none"> <li>• Keep the bar and chain covered with a bar cover.</li> <li>• Secure the chainsaw, preferably in a mounted tool box to keep it from being damaged and to prevent fuel from spilling. If transporting on an ATV or snowmobile make sure it is in a secured tool box or secured to the cargo rack.</li> </ul>

	<p>saw or vehicle during a vehicle accident..</p>	<ul style="list-style-type: none"> <li>• Never transport a chainsaw in the vehicle’s passenger compartment.</li> </ul>
<p>Transporting chainsaws on foot</p>	<p>Person carrying saw can be seriously cut while walking <i>with saw running</i>.</p> <p>Person carrying saw can be cut or burned at potentially vital spots (such as the neck) if hot or sharp saw parts are insufficiently padded/covered.</p>	<ul style="list-style-type: none"> <li>• Avoid contact with muffler and power head of a recently used saw.</li> <li>• When carrying saw for short distances up to 50 feet, set the chain brake.</li> <li>• When carrying the saw more than 50 feet, from tree to tree or under slippery conditions, shut it off.</li> <li>• Carry the saw so the chain, dogs, or muffler do not contact your body.</li> <li>• To protect yourself from sharpness of the chain and dogs, while carrying the saw on your shoulder, wear a long sleeved shirt and roll up your shirt or coat collar. Wear leather gloves and a padded, cut-resistant shoulder pad (stand alone or integrated into your pack strap).</li> <li>• Cover the bar, chain, and dogs, preferably with a manufactured bar and chain cover that meets these requirements. A good bar cover is a segment of 3 or 4”, rubber-lined fire hose with one end slit open enough to cover the ‘dogs’ and the muffler. Never use your chaps to cover the bar, as they will be prone to contamination from the bar oil and to cutting from the chain. Roll up your shirt collar on the bar side for additional protection.</li> </ul>
<p>Inspecting the work site for hazards</p>	<p>Not inspecting work site for hazards can result in sawyer, bystanders, property, or vehicles being struck by falling branches or tripping over obstacles after final cut is made. These occurrences can lead to injury or death of operator or others.</p>	<p>Project supervisor shall ensure that work site is evaluated for hazards.</p> <ul style="list-style-type: none"> <li>• Use OHLEC to size up worksite(s)/operation (Objective, Hazards, Leans/Binds, Escape routes, Cutting plan) Size-up process and US Forest Service Saw Program Complexity Guide to size up Falling, limbing, and bucking operations.</li> <li>• Escape routes are determined for bucking situations when needed.</li> <li>• Slope of work site is taken into consideration.</li> <li>• Use special consideration around roads, powerlines, and trails.</li> <li>• Beware of rocks or objects on log to be bucked.</li> <li>• <b>Look for overhead hazards.</b></li> <li>• Take into consideration the limits of personal ability and equipment.</li> <li>• Plan for safety of people and property in the cutting zone.</li> <li>• Inspect for spring poles, falling or rolling root wads and broken limbs under the log that could hook the sawyer if log rolls.</li> <li>• Evaluate binds, tension and compression in log where cuts are planned.</li> <li>• Anticipate log’s tendency to roll, slide or bind.</li> <li>• Evaluate footing for possible slips, trips and falls.</li> </ul>

<p>Starting the chainsaw</p>	<p>Improper starting techniques can cause saw to rotate backward in responses to engine torque or result in spinning chain coming in contact with operator. The result of either is ragged cuts, potentially fatal blood loss, and or loss of body parts.</p>	<ul style="list-style-type: none"> <li>● Use the ground start or leg lock method for starting the chainsaw. Do not drop start.</li> <li>● Be sure the chain brake is engaged. When engine starts, <b>immediately</b> blip the throttle to release the high speed idle.</li> <li>● Start the saw where you will be cutting to eliminate the need to walk to the site with a running saw.</li> <li>● There must be at least two holding points on saw at all times while starting (on ground: hand and foot. Leg lock method: hand and legs serving as vise).</li> </ul>
<p>Operating Chainsaw</p>	<p>Improper placement of bar tip while cutting (especially upper 90° of bar nose) can cause chainsaw chain to grab and run along a tree, log, or branch extremely quickly rotating back onto the operator before the operator has time to react (kickback). This can cause deep ragged cuts that can become infected, result in loss of body parts, or, if they hit an artery, can be fatal.</p>	<ul style="list-style-type: none"> <li>● Be alert for kickback caused by tip of the bar contacting solid objects. Know exactly where the bar and tip are at all times.</li> <li>● Keep your thumb wrapped around the front handle.</li> <li>● Cut away from the body and stand to the side of the cut while bucking.</li> <li>● Keep your balance by avoiding awkward stances and/or slippery footholds.</li> <li>● Throttle up to <u>full speed</u> before initiating any cuts. <b><i>Operating at full throttle reduces the chance of kickback as a faster spinning chain with more momentum is less likely to have a cutter jam in the wood.</i></b></li> <li>● Keep proper tension on the chain</li> <li>● Maintain sharp chain cutters by periodically hand filing during work. After 3 or more hand filings, use saw file guide(s) to reset angles on cutters, and proper depth gage height.</li> <li>● Clean and maintain saw regularly so that bar oil flows freely and saw performs at full power.</li> <li>● <b>Operators shall exercise their personal authority to decide when they have reached the limit of their ability and/or experience. If you have to ask the question, “Can I do this?”; don’t! Stop and call someone with more experience (club/association volunteers should call the Forest Service to get help with difficult trees).</b></li> <li>● Do not cut with the power head positioned above shoulder height.</li> <li>● Always make sure that other workers stay well away from you when sawing and that they don’t approach you from behind and before making eye contact.</li> <li>● Station a lookout to watch and warn of approaching traffic, hikers and/or personnel when falling trees. Remember that other people recreating may be using the area.</li> </ul>

		<ul style="list-style-type: none"> <li>• Never run a chainsaw alone, unless confronted with an unavoidable situation like an unexpected blowdown blocking vehicular traffic.</li> </ul>
<p>Limbing and bucking downed trees</p>	<p>Improper planning and techniques can result in “struck by” accidents.</p>	<ul style="list-style-type: none"> <li>• Use OHLEC to size up operation. (Objective, Hazards, Leans/Binds, Escape routes, Cutting plan) Size-up process and US Forest Service Saw Program Complexity Guide to size up Falling, limbing, and bucking operations.</li> <li>• Plan escape routes and escape beyond eight feet when log is released. <b>(Escape distance for felling will be a minimum of 20 feet from tree!)</b></li> <li>• When bucking uprooted trees do not stand behind or downhill from root plates.</li> <li>• Remove small trees growing on root plates before limbing and bucking. If root plate rolls you could be struck by or pinned beneath it.</li> <li>• Leave limbs that may be preventing log from rolling.</li> <li>• Warn co-workers when release cut is about to be made.</li> <li>• Never approach bucking operations from downhill.</li> <li>• Check for overhead hazards. Work on the uphill side or side where blowdown is least likely to roll toward you.</li> <li>• Check for objects such as stumps, rocks or spring poles that may be hidden by limbs of the downed tree. Striking these objects with the saw can create a kick back.</li> <li>• Maintain a firm grip on the saw with thumb wrapped around front handle.</li> <li>• In situations where a released tree could roll, be cautious when cutting limbs that are supporting tree off the ground: Determine which limbs are non-supporting and remove them first. Re-evaluate the situation for hazards and direction the tree is likely to move when supporting limbs are cut. Determine tension and compression on supporting limbs and plan your cuts accordingly. Put other crew members in a safe area and sawyer shall maintain a clear escape route before cutting supporting limbs.</li> <li>• Do not cut blow downs or hung trees that are above your experience level.</li> </ul>
<p>Dealing with sprung tree and branches</p>	<p>Incorrectly relieving the tension on a sprung tree or branch (spring pole) can result in the sprung tree or branch “throwing” the saw at a</p>	<ul style="list-style-type: none"> <li>• Use OHLEC to size up operation (Objective, Hazards, Leans/Binds, Escape routes, Cutting plan) Size-up process and US Forest Service Saw Program Complexity Guide to size up Falling, limbing, and bucking operations.</li> </ul>

	<p>high rate of speed back at saw operator if the tension is suddenly released. This can sever limbs, and arteries, or open serious torso wounds on the saw operator.</p>	<ul style="list-style-type: none"> <li>• Remove spring poles before limbing and bucking tree.</li> <li>• Cut only when necessary. If there is a limb, log or other obstruction pinning the spring pole, it can be removed to release the same. When releasing the pinned end of the stem, take care to look up for potential overhead hazards. Cut all non-tensile members prior to release of the key stem. Stand directly under the key stem when releasing it.</li> <li>• Position yourself to work from a safe location.</li> <li>• Use technique learned during training to remove a spring pole with a chainsaw: use shallow, overlapping cuts on compression side at point of equal tension. Go slowly! When in doubt, err to the high-side for the release point when releasing at the point of equal tension. This will prevent the backward movement of the upper member from kicking back towards the operator.</li> <li>• Give springer time to respond to cuts. Do not cut if long tree/branch is collapsing on the cut; leave it alone until the stem stabilizes.</li> </ul>
<p>Felling a tree</p>	<p>Improper planning and techniques can result in a tree or overhanging branch falling on and crushing you, bystanders, property, or vehicles.</p>	<ul style="list-style-type: none"> <li>• Use OHLEC (Objective, Hazards, Leans/Binds, Escape routes, Cutting plan) Size-up process and US Forest Service Saw Program Complexity Guide to size up Falling, limbing, and bucking operations.</li> <li>• Always position yourself to work from the safest possible location.</li> <li>• Analyze species, size and soundness. Seek local knowledge if you are unsure, they will have a good, running knowledge of these factors. Assess dangers of rolling rocks or logs. Assess aerial hazards and potential weakness indicators including: dead limbs, weak limb intersections (acute angles), vertical cracks, fruiting bodies (conks), bird &amp; rodent damage, top heaviness &amp; overall balance of the limbs and the lean direction. Assess nearby hazards, including other trees, rocks, brush, mud, etc. Note the speed and direction of the wind and aspect, working room, location of people &amp; equipment, escape routes, and safety areas.</li> <li>• Check for overhead hazards. Never work under aerial hazards. Flag off all overhead hazards with flagging suspended horizontally.</li> <li>• Maintain a firm grip on the saw with thumb wrapped around front handle.</li> <li>• Put other equipment and crew members in a safe area at least 2½ tree lengths from the tree to be felled.</li> <li>• Sawyer prepares a clear escape route before cutting tree. Make sure the escape route is clear of logs, limbs, stumps, and rocks to avoid slips,</li> </ul>

		<p>trips, and falls. Unless an unexpected factor warrants a change in your planned escape route, stick to your planned route so as to avoid indecision (and wasted time) upon release of the tree. <b>MINIMUM desired escape distance is 20 feet!</b> Angle of escape should be close to 45° from and opposite of the felling direction and on the ‘good’ side of the tree. In extremely steep conditions, an escape angle closer to 90° may be advisable to achieve a better escape distance from the stump.</p> <ul style="list-style-type: none"> <li>• For Back leaning trees, an escape route should be established 45 degrees from the front of the tree on the good side. This escape route may then be used in the rare event of hinge fiber failure before the tree is wedged past its tipping point.</li> <li>• Remove bark from snags. Consider all snags as being rotten.</li> <li>• Avoid falling more than one tree at a time. -</li> <li>• Correctly establish lean of tree using center of mass analysis (canopy and the trunk).</li> <li>• Make proper face cut (Minimum 80% of tree’s diameter at cut height; Minimum 70° interior angle measured at apex). If tree size requires backcuts from both sides, perform first cut from the ‘bad’ side of the tree to a depth not to exceed 50% of the diameter. Said ‘bad’ side should be chosen based on, but not limited to the following criteria:             <ol style="list-style-type: none"> <li>a. Overhead hazards in the tree to be felled.</li> <li>b. Overhead hazards in other trees affected by the felling path.</li> <li>c. The best escape route (on the ‘good’ side).</li> <li>d. The ‘good’ side affords the best footing for the final back cut.</li> <li>e. All other criteria being the same, the uphill (tension) side of the tree is the best side of the tree to finish on.</li> </ol> </li> <li>• Make proper back cut. Hinge width should measure within 1/2“of the 10% diameter guideline. For trees larger than 24” diameter, the thickness of the hinge may have to be less than the 10% guideline to allow the tree to fall. The hinge thickness shall be consistent from one side to the other. Back cut should be at the same elevation as the apex of the face cut. For <i>snags</i> with deteriorating hinge fiber, it is suggested that you leave 2” to 3” of ‘stump shot’. “Stump Shot” means making the back cut <u>higher</u> than the apex of the face cut, primarily as an anti-kickback measure for dead/rotting wood.</li> <li>• The project supervisor and the sawyer shall determine jointly if spotters are needed during tree felling operations. It is within the sawyer’s</li> </ul>
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		<p>authority to determine if a spotter and/or observer is needed within 2 ½ tree lengths of the stump. <b><i>Clear all other personnel from the area to a radius of not less than said 2 ½ tree length radius.</i></b></p> <ul style="list-style-type: none"> <li>• Never allow outside personnel to approach the cutting area before determining the area as being safe. Announce as such by yelling “clear”.</li> <li>• Attempt to operate at the same contour level as the base of the stump when felling trees greater than 36” dbh.</li> <li>• Station a lookout to watch and warn of approaching traffic and/or personnel.</li> <li>• Never continue work in hazardous weather conditions (thunderstorms, fog or any other precipitation which obscures the tops, high winds, darkness, etc.).</li> <li>• Maintain clear working area and escape routes, with particular attention to tripping and eye level hazards. Stamp out escape routes and felling area if working in snow.</li> <li>• Check felling path and immediate area for adjacent snags and/or trees with broken tops, hanging limbs or debris.</li> <li>• All trees greater than 4” DBH shall be undercut.</li> <li>• Never leave a tree/snag in a partially cut condition.</li> <li>• If a tree hangs up and you cannot get it down using safe methods, flag the area off and notify the following personnel: your supervisor, any ground personnel in the area and the safety officer. If you anticipate a hang-up situation, attempt to clear a better path and/or pre-establish a mechanical link to the canopy of the tree (I.E. a rope for pulling by dozer or hand winch). If a push pole is needed to get the tree down, hold it against your body. Never use direct arm or shoulder contact while pushing against the tree.</li> <li>• Do not make any cuts in hollow or rotted trees unless a sound hinge can be established. The general rule is 1” of sound wood for every 6” of diameter for a hollow tree.</li> <li>• Before initiating the back cut, shut off the saw and yell “Tree Falling and specify the direction of the fall in relation to the landscape feature or topography i.e. “Tree falling East across slope,” or “Tree falling North across trail”</li> <li>• Just before releasing the final holding ‘tab’, stop the saw again and shout the same warning twice and listen for any response. Clear with lookout if applicable.</li> </ul>
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Felling/Barber-Chairs	Improperly cutting trees with a heavy lean can cause the tree to split up the middle of the bole and suddenly kick back toward you out of control potentially crushing and killing you.	<ul style="list-style-type: none"> <li>• Use bore cut on heavy leaners to relieve tension on heartwood.</li> <li>• On large trees, make offside back cuts first. Do Not cut more than half way through the tree diameter on an offside back cut.</li> <li>• Virtually <u>any</u> tree that barber-chairs can be lethal, and must not be discounted from safe felling methods.</li> <li>• For trees with heavy lean angles, larger release tabs will be necessary and particular care shall be given to the danger of root separation upon release of said tab. To slow the process, and reduce the risk of the chainsaw being bound in the kerf and launched along with the falling tree, the tab can be released below the back cut and apex level cutting from the outside of the tree.</li> </ul>
Emergency Response	Lack of emergency response plan causes delays in obtaining emergency medical treatment	<ul style="list-style-type: none"> <li>• Provide the following information in this JHA, document on your tailgate safety meeting form, and share with all project participants:             <ol style="list-style-type: none"> <li>1. Means of communication (radio, cell, satellite). Check mode of communication prior to beginning field work at your location. If you do not have clear communication from the work site, where along the road will you be able to get a communication line out?</li> <li>2. Primary contacts (rescue squad, F.S. dispatcher, relay person)</li> <li>3. Travel routes for emergency responders</li> <li>4. Location of closest medical facilities</li> <li>5. How to contact them (phone #s)</li> </ol> </li> </ul>

		<p>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.</p> <p>Be able to describe crew location to emergency medical responders. Perform a dry run, or example of how you would describe your location prior to starting work in case directions are difficult to give to an E-911 operator.</p> <ul style="list-style-type: none"> <li>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 without EMS. Call emergency responder for this kind of transport and follow instruction from 911.</li> </ul>
10. LINE OFFICER SIGNATURE	11. TITLE	12. DATE
	Forest Supervisor <b>John A. Sinclair</b>	

Previous edition is obsolete

# Appendix 17 – GMFL Safety and Occupational Health Plan

# JHA #31

JHA Instructions (References-FSH 6709.11 and .12)

Emergency Evacuation Instructions (Reference FSH 6709.11)

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.

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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_____	_____	_____	_____
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