

U.S. Department of Agriculture	1. WORK PROJECT/ACTIVITY	2. LOCATION	3. UNIT
Forest Service	<b>Backcountry Work Environment</b>		
JOB HAZARD ANALYSIS (JHA)	4. NAME OF ANALYST	5. JOB TITLE	6. DATE PREPARED
References-FSH 6709.11 and -12 (Instructions on Reverse)			1/12/2016
7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE	
General Hazards	Personal Injuries (general)	<p>-Proper Personal Protective Equipment (PPE) should be in good condition &amp; worn at all times:</p> <p>-Non-skid boots with sufficient ankle support as identified in the health and safety code handbook for the specific activity you are engaged in. - Leather gloves</p> <p>-Wear a long sleeve shirt to prevent cuts and scrapes. -A hardhat is to be worn at all times in the woods when working with hand tools and/or if wind conditions warrant.</p> <p>-Eye protection</p> <p>-At least one person in the crew must carry a first aid kit in their pack at all times</p>	
	Getting lost and other general hazards	<ul style="list-style-type: none"> <li>o Prevention –</li> <li>o Be familiar with area of travel, know reasonable travel expectations, allow for unforeseen delays.</li> <li>o Carry map, compass, and GPS with the group.</li> <li>o Have a communication plan and equipment as appropriate (FS radio, cell phone, satellite phone, SPOT tracker)</li> <li>o Carry bivouac equipment for the group to spend a night in the field if necessary (i.e.: bivy sack, tarp, sleeping bag, sleeping pad, fire starter, tarp, extra food, etc.)</li> <li>o <b>DISCUSS COMMUNICATION PLAN PRIOR TO DEPARTURE</b></li> </ul>	

Adverse Weather Conditons	Wind	<ul style="list-style-type: none"> <li>-In burned areas even light wind can cause trees to fall</li> <li>-In unburned areas light to moderate winds can cause snags to fall or break branches out of green trees</li> <li>-Extreme winds can blow down large tracts of timber and branches in relatively short times</li>   <li>-Avoid working in areas of dead timber (burned or otherwise) during times of high wind</li> <li>-Plan for increasing winds in the afternoon; listen to daily weather forecasts and special wind warnings.</li> <li>-Listen for trees falling as a warning of approaching winds. - Delay or suspend work in areas of dead trees during wind events -Wear your hardhat at all times.</li> <li>-If caught in a timbered area during periods of high winds, move to the nearest natural opening large enough to give protection from</li> </ul>
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		falling trees and limbs
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	<p>Hot Conditions— Heat Stress, Sunburn</p>	<p>Hyperthermia is the result of the body being unable to maintain a cool enough core temperature leading to reduced mental capacity and eventually death. Hyperthermia can result from either high air temperature or heat generated by physical exertion. Dehydration significantly increases the risk of hyperthermia</p> <ul style="list-style-type: none"> <li>· Prevention: <ul style="list-style-type: none"> <li>○ Keep hydrated. Drink water before, during and after work. Ensure that everyone in the crew has adequate water supplies until the next resupply.</li> <li>○ Plan work activities in accordance with cool and hot hours of the day. If possible work in the shade during the heat of the day</li> <li>○ Pace yourself to prevent exhaustion and overheating</li> <li>○ Maintain adequate caloric intake</li> <li>○ Maintain adequate electrolyte intake</li> </ul> </li> <li>· Identification <ul style="list-style-type: none"> <li>○ Loss of coordination, reduced mental status</li> <li>○ Sweating out of character for exertion level (too much or too little)</li> <li>○ Flushed and dry</li> </ul> </li> <li>· Treatment <ul style="list-style-type: none"> <li>○ Stop physical exertion</li> <li>○ Move to shaded environment</li> <li>○ Provide water or sports drink</li> <li>○ cool patient with water/fanning</li> </ul> </li> </ul> <p>Hyponatremia is an inadequate level of salts in the blood stream leading to reduced mental status.</p> <ul style="list-style-type: none"> <li>· Prevention <ul style="list-style-type: none"> <li>○ Ensure adequate electrolyte intake with water</li> </ul> </li> <li>· Treatment <ul style="list-style-type: none"> <li>○ Provide sports drink or salty foods</li> <li>○ Cool patient to prevent further loss of salts to sweating</li> </ul> </li> </ul> <p>Sunburn</p> <ul style="list-style-type: none"> <li>· Prevention <ul style="list-style-type: none"> <li>○ Wear clothing to cover skin</li> <li>○ Use high SPF Sunscreen</li> </ul> </li> </ul>
	<p>Cool/Wet Conditions Hypothermia</p>	<ul style="list-style-type: none"> <li>○ Hypothermia is the result of the body unable to maintain warm enough core temperature leading to reduced mental capacity and eventually death</li> <li>○ Hypothermia can occur at relatively mild temperatures</li> <li>○ Most hypothermia cases develop between 30 degrees Fahrenheit and 50 degrees Fahrenheit</li> <li>○ Wet clothing can be a significant factor in increasing heat loss</li> </ul>

		<ul style="list-style-type: none"> <li>○ <b>Prevention:</b></li> <li>○ Dress in layered clothing appropriate to the conditions – avoid cotton</li> <li>○ Keep clothing dry – carry extra as appropriate</li> <li>○ Manage layers to minimize sweating to keep clothing dry</li> <li>○ Maintain adequate caloric intake</li> <li>○ Maintain adequate hydration</li> <li>○ <b>Identification</b> – loss of coordination, reduced mental status (stumble, mumble, grumble)</li> <li>○ <b>Treatment</b> – Mild (able to cooperate with treatment) – insulate from environment, provide high sugar food, provide water</li> <li>○ <b>Treatment</b> – Severe (unable to cooperate with treatment) – insulate from environment, immediate gentle evacuation to medical care</li> </ul>
	Thunderstorms/ Lightning	<ul style="list-style-type: none"> <li>- Do not work on phone line during lightning storms</li> <li>-Avoid the tops of ridges, hilltops, wide-open spaces, ledges, rocky outcrops, and shelters in exposed areas. Avoid tall objects such as lone trees. Your best protection outside is a canyon, ditch, or head high clumps of trees.</li> <li>-Avoid grouping people together</li> <li>-If a lightning strike seems eminent, the best protection in open country is to make yourself as small a target as possible. Move away from horses and stock. Drop to your knees, bend forward with your hands resting on your knees, and keep a distance of twice the height of the nearest tree between you and the tree. Keep your feet together.</li> <li>-Persons struck by lightning may receive a severe electrical shock and burns, including entry and exit wounds. VICTIMS OF A LIGHTNING STRIKE MAY SUFFER RESPIRATORY AND/OR CARDIAC ARREST. THEREFORE, ADMINISTER CPR IMMEDIATELY IF NEEDED AND FIRST AID, AS REQUIRED</li> </ul>
Environmental exposure	Giardia	<p>Giardia is a microscopic organism that, after ingestion, normally attaches themselves to the small intestine and cause severe intestinal distress.</p> <ul style="list-style-type: none"> <li>○ Prevention <ul style="list-style-type: none"> <li>○ Giardia spores naturally occur in many surface water sources <ul style="list-style-type: none"> <li>▪ Water may be treated by filtering (1 micron filter), boiling ( minimum 1 minute), chemical treatment (chlorination or iodine), or UV (ie Steripen)</li> <li>▪ Do not drink untreated water</li> </ul> </li> <li>○ Giardia is also commonly transmitted from person to person</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>▪ Thoroughly wash hands after defecating</li> <li>▪ Thoroughly wash hands prior to handling food</li> <li>▪ Use hand sanitizer in conjunction with (not in replacement of) hand washing</li> <li>▪ Do not handle food if you suspect you may have been infected</li> <li>▪ Wash cooking and serving utensils in hot water, treat rinse water with bleach</li> </ul> <ul style="list-style-type: none"> <li>○ Treatment <ul style="list-style-type: none"> <li>○ Giardia may be treated by prescription medication</li> <li>○ If you suspect you are infected seek medical attention as symptoms do not “go away” and you are exposing you coworkers</li> </ul> </li> </ul>
*	Hantavirus (53.73a)	<p>-Hantavirus is a cause of acute pumonary disease and death.</p> <p>-The primary carrier is the deer mouse.</p> <p>-Transmission occurs by inhalation of the aerosolized virus when dried materials contaminated by droppings are disturbed; -Avoid direct contact with rodents (live or dead), their droppings, urine, nests, or items that may be contaminated</p> <p>-Do not sweep until the area has been soaked disinfectant and let soak thoroughly for 10-15 minutes (bleach solution of 1 part household bleach to 10 parts water).</p> <p>-Before working where there is a heavy rodent infestation review the Hantavirus JHA</p>
*Foot Travel (11.2-11.32)	Physical Exhaustion	<p>-Pace yourself.</p> <p>-Know your limitations.</p> <p>-Report for work in reasonable shape.</p> <p>-Stay in constant visual or verbal contact with your fellow crew members.</p> <p>-Crew leaders are responsible to keep their crew moving as a single unit and should travel as fast as the slowest member.</p>
	Blisters	<p>-Wear boots that are adequately broken in. carry “camp shoes”</p> <p>-Stop and tend to hot spots when they first appear</p> <p>-Carry first aid kit with stocked blister kit. Have duct tape available.</p>

*Fording Rivers & Streams	Slipping & Falling	<ul style="list-style-type: none"> <li>- Avoid fording rivers and streams when possible.</li> <li>- Do not ford a stream unless you are certain that <b>all</b> members of your group can ford safely.</li> <li>- When streams are muddy or you can hear rocks rolling along the stream bed, they are likely too high to cross safely.</li> <li>- Stream levels can change rapidly in response to daily snow melt and rain events. Plan accordingly.</li> <li>- When travel requires fording, select the safest location. A crossing with shallow, slow moving water over a bed of gravel or</li> </ul>
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		<p>cobbles is preferred. Deep, swift water over boulders is least desirable.</p> <ul style="list-style-type: none"> <li>- Fording multiple channels or braids may be safer than crossing a single large channel.</li> <li>- Avoid fords with hazards directly downstream such as rapids and log jams. Or where you cannot see potential downstream hazards</li> <li>- Use a trekking pole or stout walking stick for balance. - Shuffle your feet rather than taking long strides. Walk on stream bottom rather than stepping from boulder to boulder.</li> <li>- Loosen your shoulder straps and unbuckle your waist belt and chest strap prior to fording a stream. Discard your pack if you fall and are being swept downstream.</li> <li>- Do not ford streams barefoot. Wear wading shoes, rubber soled sandals or hiking boots.</li> </ul>
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Human, Wildlife Interaction	Bear Encounters or Attacks Reference H&S Handbook 53.7,53.71,53.72	<ul style="list-style-type: none"> <li>- <i>Bear Spray has been shown to be highly effective when used properly, to stop bear attacks. Bear spray and training is available for employees. You are strongly encouraged to carry bear spray when working, travelling or camping on the Flathead NF. Refer to the Bear Spray JHA</i></li> <li>- All bears are potentially dangerous.</li> <li>- Risk is increased when bears are surprised, or are defending either cubs or a food source.</li> <li>- Minimize your likelihood of encountering bears by working in groups and making noise when possible. Use extra caution when working or travelling in areas with fresh bear sign or areas known to be frequented by bears</li> <li>- If you encounter an animal carcass with bear sign, leave the area immediately and tell your supervisor and any other people in the area.</li> <li>- If you do encounter a bear in close proximity, remain calm, move away slowly and speak in a low voice. Your objective is to not be perceived as threatening. Prepare to use bear spray if you are carrying it.</li> <li>- Bears may stand on their hind legs or approach to help see and identify you, this may not be a sign of aggression.</li> <li>- If the bear charges or continues to approach use bear spray according to your training.</li> <li>- If you do not have bear spray assume a position face down with your legs tucked to your chest and your hands clasped behind your neck.</li> <li>- When camping in bear habitat, keep a clean camp, minimize all attractant odors.</li> <li>- Follow the food storage order and keep all food, dishes and trash away from your sleeping area.</li> </ul>
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*	Mountain Lions (53.72)	<ul style="list-style-type: none"> <li>-Make noise while you work and travel to prevent surprising a lion.</li> <li>-Give the lion a way to escape. Talk calmly yet firmly.</li> <li>-Stop or back away slowly.</li> <li>- Appear threatening to the lion, Never crouch, try to hide, turn away or run away.</li> <li>-Try to appear larger by raising arms or object over the head.</li> <li>-If the lion behaves aggressively, throw stones, branches, or whatever can be reached without crouching or turning away.</li> <li>-Fight back if attacked. Protect head and neck.</li> </ul>
*	Insects (53.61) (53.61a)	<ul style="list-style-type: none"> <li>-Watch out for bee nests.</li> <li>-Carry an EpiPen and Benadryl (diphenhydramine) if you are allergic</li> <li>-Let your crew know if you have allergic reactions, and inform them as how to treat you if stung</li> <li>-Wood ticks are common (especially before mid July), check for ticks regularly</li> <li>- If a tick is embedded, remove using gentle consistent pressure (this may take several minutes), clean the bite site and monitor for any infection or reaction.</li> <li>-Be prepared for mosquitos and flies by carrying repellent and wearing protective clothing (nets, long sleeves, pants).</li> </ul>
*Hunting Season (21.31)	Accidental Shootings	<ul style="list-style-type: none"> <li>-Wear hunter orange safety vest during hunting season</li> <li>-Post signs near work sites to warn hunters of crew location</li> <li>-Reschedule jobs to allow crew to safely work away from hunters when possible</li> <li>-Visit hunting camps and warn hunters in the camp that crews are working in the area</li> <li>-Avoid wearing clothing during hunting season that is the same color as the game animal being hunted</li> </ul>
*Trail Clearing	Use of Hand Tools-- Injury	<ul style="list-style-type: none"> <li>- Inspect tool handles and heads for flaws and needed repairs</li> <li>- Wear gloves, sturdy boots, long sleeved shirt, long pants, hardhat, and eye protection.</li> <li>- Carry all tools in scabbards. Do not carry tools over your shoulder, except as described under crosscut saws and chainsaws.</li> <li>-Ensure proper footing before beginning to use your tool.</li> <li>- Provide for adequate spacing, at least 10' between your neighbor.</li> <li>- - - Clearly communicate when you need to pass by and wait for people to stop working before moving through.</li> <li>-Do not stand behind someone swinging a hand tool</li> </ul>

		- Refer to hand tool and saw JHA for tool use information	
*Heavy Lifting (52.42)	Muscle Strains	<ul style="list-style-type: none"> <li>-Before lifting heavy objects, plan where the object will be placed and clear the route.</li> <li>-Before lifting heavy objects stretch and loosen muscles to reduce the chance of muscle strains or other injuries</li> <li>-Use your knees not your back when lifting, keep body straight and do not twist while lifting. Ask for help if necessary and use a pry/rock bar if needed for leverage.</li> </ul>	
*Camp Safety	Camp Hazards	<ul style="list-style-type: none"> <li>-Avoid natural hazards including overhanging rocks, snags, and rock slide areas when choosing a camp location.</li> <li>-Store tools in a specified location in camp. Do not leave tools scattered around the tents or in the kitchen area.</li> <li>-Keep camp clean – use sanitation techniques recommended by LNT</li> <li>-Store attractants in accordance with the food storage order -Keep food protected from weather, flies, and rodents</li> <li>-Train employees in proper use of specific camp equipment including camp stoves, water filters,</li> <li>-Store white gas away from wood stove or propane stove</li> </ul>	
*Hazard Trees	Trees Falling	<ul style="list-style-type: none"> <li>-Stay out of areas with burned areas and other snag patches during windy conditions</li> <li>-Do not camp in areas that have numerous dead standing snags - If there are specific trees of concern, remove the hazard if it can be done safely</li> <li>-Wear hard hat in areas that have snags</li> </ul>	
Backcountry Ranger Station Flammable Storage	Fire Hazard	- Store flammables in clearly marked containers in the designated building or area	
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10. LINE OFFICER SIGNATURE		11. TITLE	12. DATE
		<b>District Ranger</b>	

**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) writing the JHA, the date(s) of development, and the name of the appropriate line officer approving it. The supervisor 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 **SIGNATURE DATE SIGNATURE DATE** 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 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 frequency(s).
- e. Contact person.
- f. Local hazards to ground vehicles or aviation.
- g. Weather conditions (wind speed & direction, visibility, temp).
- h. Topography.
- i. Number of person(s) to be transported
- j. Estimated weight of passengers 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:

**Work Leader**