U.S. Department of Agriculture
Forest Service

JOB HAZARD ANALYSIS (JHA)
References-FSH 6709.11 and -12
(Instructions on Reverse)

1. WORK PROJECT/ACTIVITY	2. LOCATION	3. UNIT
General Trail Maintnenance	**Zigzag, OR**	**Zigzag RD**
4. NAME OF ANALYST	5. JOB TITLE	6. DATE PREPARED
Kathleen Walker	**Recreation Assistant**	**June 9,2007 (July 16 edit MEF)**

7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE
DRIVING TO THE JOBSITE	**Dusty, winding, narrow roads**	**Drive confidently and defensively at all times. Go slow around corners, occasionally clearing the windshield. *Be able to stop in half your sign distance.***
	Rocky or one-lane roads	**Stay clear of gullies and trenches, drive slowly over rocks. Yield right-of-way to oncoming vehicles---find a safe place to pull over.**
	In an unfamiliar vehicle	**Check brakes, steering, seatbelts, fluid levels, lights. Use maintenance checklist in vehicle logbook.**
	Stormy weather, near confused tourists	**Inquire about conditions before leaving the office. Be aware of oncoming storms. Drive to avoid accident situations created by the mistakes of others.**
	When angry or irritated	**Attitude adjustment; change the subject or work out the problem before driving the vehicle. Let someone else drive.**
	Turning around on narrow roads	**Safely turn out with as much room as possible. Know what is ahead and behind the vehicle. Use a backer if available. *Face the danger.***
	Sick or medicated;	**Let others on the crew know you do not feel well. Let someone else drive.**
	On wet or slimy roads	**Drive slow and safe, wear seatbelts.**
	Animals on road	**Drive slowly, watch for other animals nearby.**
COMMUNICATION	**Safety, crew unity**	**Have all crew members in communication link. Radios: Have one with good batteries, know how to use it and what channel to use. Know "dead spots" on the district. When each crew member does not have a radio, make sure they are in verbal communication with someone who does. Know where all crew members are.**
		Talk to each other. Let other crewmembers know when you see a hazard. Avoid working near known hazard trees. Yell "ROCK!" if you see one start to roll down the hill. Always know the wherabouts of fellow crewmembers. Carry a radio and spare batteries. Review Emergency Evacuation Procedures (see below).
		Make sure supervisor or Forest Dispatch or other appointed person ensures that all individuals make it in from the field.
LOADING TOOLS AT SHOP	**Unsecured tools and tripping hazards.**	**Keep shop in clean condition and tools stored properly** **In vehicle, transport tools in cage or secured roof rack or in back of pick up**
WALKING AND WORKING IN THE FIELD	**Falling down, twisted ankles and knees, poor footing**	**Always watch your footing. Slow down and use extra caution around logs, rocks, and animal holes. Extremely steep slopes (>50%) can be hazardous under wet or dry conditions; consider an alternate route.** **Wear appropriate footwear, typically hiking or fire boot. Volunteer without boots need to refrain from using "grubbing" tools or axes headed tools or from being on rough trails.**
	Falling objects	**Wear your hardhat for protection from falling limbs and pinecones, and from tools and equipment carried by other crewmembers. Stay out of the woods during extremely high winds.**
	Damage to eyes	**Watch where you walk, ecpecially around trees and brush with limbs sticking out. Exercise caution when clearing limbs from tree trunks. Ultraviolet light from the sun can be damaging to the eyes; look for sunglasses that specify significant protection from UV-**

		A and UV-B radiation.
	Bee and wasp stings prevention.	**Do work in prone areas during earlier part of season and earlier part of day. Watch area before digging for bee activity. Do not work the area if bees are present. Know who is allergic on crew. Carry bee kit as anyone can have an allergic reaction. Do not walk single file. Drop tools pack and run if bee nest is stirred up. Spray nest from 20+ft.**
	Bee and wasp sting first aid.	**Carry anti-histimine in first aid kit. Watch for respiratory problems. Notify dispatcher and get person to a doctor immediately if there is trouble breathing. Gently scrape stinger off of one is present. Apply analgesic swab and a cold pack if possible, and watch for infection. Flag the location of any known nests and inform other crewmembers.** **Advise packing appropriate prescription mediations (Epi-pen) if you are prone to severe allergic reaction.**
	Ticks and infected mosquitos	**Wear long sleeve shirts. Tuck pants into socks/boots. Visually check each other for ticks while in the field. Check yourself carefully at home at day's end.** **If a tick is imbedded in you:** ***Gently pull the tick out with tweezers or fingernails using a quick tug.** ***Wash the infected area and monitor for a red rash. *See doctor is rash develops.***
	Back and muscle strain and pulls.	**Perform pre-season and during season condition training.** **Warm up with stretching exercises.** **Use tools properly. See separate tool use JHA.** **Eliminate or repair broken or damaged tools.** **Use proper lifting procedure.** **Take breaks from repetitive motion**
	Working too close to others	**Keep appropriate working "dome". When working in close proximity of others, work with them and communicate what actions are being taken.**
	Fatigue	**Keep tools sharp and properly maintained. Use tools properly (see tool use JHA). Make sure people have adequate training for tool use. Take frequent breaks. Vary work done through day with strenuous and less strenuous intermixed.**
	Tool use	**Transport tools properly. Keep safety distance between tool and user when using axes and machetes. Train crew in proper tool use. Use protective clothing "PPE" including gloves, hard hats, appropriate boots at all times and chaps and other specialized PPE when necessary.** **Use proper tool for job. Do not use broken or damaged tools. Repair broken tools. Discard tools beyond repair.** **Clear area of obstructions.** **Keep personnel spaced apart.**
WORKING AROUND TRAIL USERS	**Conflicts with stock users, bikers and hikers**	**If needed, close the trail to users while work is being done. Set up flaggers when needed on both ends of trail work site.**
		Communicate with other when trail users are coming through
		Let trail users know what you need them to do or what you are doing. "We just need to finish moving this curb log out of the way and then you can pass through"
		When stock is coming through, go to the downside of the trail and verbally talk to the rider.
		Always put unused tools down off the trail.
ENVIRONMENTAL	**Heat Stress and Heat**	**Remain constantly aware of the four basic factors that determine the degree of heat**

HEALTH CONSIDERATIONS	**Exhaustion**	**stress (air temperature, humidity, air movement, and heat radiation) relative to the surrounding work environmental heat load.** **Know the signs and symptoms of heat exhaustion, heat cramps, and heat stroke. Heat stroke is a true medical emergency requiring immediate emergency response action.** **NOTE: The severity of the effects of a given environmental heat stress is decreased by reducing the work load, increasing the frequency and/or duration of rest periods, and by introducing measures which will protect employees from hot environments.**
	Severe Environmental Heat Loads	**Maintain adequate water intake by drinking water periodically in small amounts throughout the day.**
	Variable Climatic Conditions & personal safety	**Always carry the ten essentials. Carry expanded first aid kit for crew.**
	Cold Extremes	**Cover all exposed skin and be aware of frostbite. While cold air will not freeze the tissues of the lungs, slow down and use a mask or scarf to minimize the effect of cold air on air passages. Additional measures to avoid cold weather problems are:** ▪ **Dress in layers with wicking garments (those that carry moisture away from the body) and a weatherproof slicker. A wool outer garment is recommended.** ▪ **Take layers off as you heat up; put them on as you cool down.** ▪ **Wear head protection that provides adequate insulation and protects the ears.** ▪ **Maintain your energy level. Avoid exhaustion and over-exertion which causes sweating, dampens clothing, and accelerates loss of body heat and increases the potential for hypothermia.** ▪ **Acclimate to the cold climate to minimize discomfort.** ▪ **Maintain adequate water/fluid intake to avoid dehydration.**
MOVING OR REMOVING ROCKS OR LOGS	**Rolling on to people or smashing fingers**	**Do not work above other people. Move rocks in a controlled manner. Communicate with workers on where rock is going.**
		Ensure that trail users are not at risk. Close trail. Post flaggers and or communicate clearly with trail users as to what you are doing and when it will be safe to proceed.
		Evaluate rock hazards above trail. Secure area before work begins on trail.
		Use rock bars if needed. Bring in certified blaster to safely remove large rocks.
WORKER SAFETY	**Lost workers**	**Insure project site is clearly understood. Carry map of site. Know how to read map and use compass. See communication link above.**
	Camping site	**Ensure campsite is free of hazards. Evaluate hazard trees within falling distance of campsite. Do not camp within falling distance of snags or live trees with conks, and other signs of rot. Do not camp in bottoms of Mt. Hood canyons where there is a potential for debris flows from glaciers higher in canyon.**

Line Officer's Signature	**Title**	**Date**
Bill Westbrook	**District Ranger**	

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 desireable 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 reducting 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 Acknowledgement

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