

U. S. Department of Agriculture Forest Service JOB HAZARD ANALYSIS (JHA) References – FSH 6709-.11 and -12 <i>(Instructions on Reverse)</i>	1. WORK PROJECT/ACTIVITY Field Work – Volunteers	2. LOCATION Cheoah Ranger District Tusquitee Ranger District National Forest Ocoee Ranger District Tellico Ranger District Blue Ridge Ranger District Conasauga Ranger District	3. UNIT National Forest in North Carolina Cherokee National Forest Chattahoochee-Oconee National Forest
	4. NAME OF ANALYST Todd Sharkey	5. JOB TITLE Natural Resource Specialist	6. DATE PREPARED April 7, 2021
7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE	
Driving to the Jobsite	Dusty, winding, narrow roads Rocky or one-lane roads Turning Around on Narrow Roads	If a volunteer or service participant is driving a Forest Service vehicle, then the volunteer/participant should be aware of the Job Hazard Analysis for General Driving. a. Volunteer/participant should drive confidently and defensively at all times. b. Drive with headlights on at all times. c. Go slow around corners and over rocks. d. Stay clear of gullies and trenches. e. Yield right-of-way to oncoming vehicles – find a safe place to pull over. f. Safely turn out with as much room as possible. Know what is ahead and behind the vehicle. Use a backer if available.	
Communication	Safety Crew Unity	a. Talk to each other. b. Let other crewmembers know when you see a hazard. c. Avoid working near known hazard trees. d. Yell “Rock!” if you see one start to roll down the hill. e. Always know the whereabouts of fellow crewmembers. Supervisors or crew bosses will carry a radio and spare batteries. Be familiar with the communication plan and know your assigned frequency.	

7. TASKS/PROCEDURES (CONTINUED)	8. HAZARDS (CONTINUED)	9. ABATEMENT ACTIONS (CONTINUED) Engineering Controls * Substitution * Administrative Controls * PPE
<p>Walking and Working in the Field</p>	<p>Falling Down Twisted Ankles and Knees Poor Footing</p>	<p>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. Tree root holes are prevalent and should be flagged. Work boots, hiking boots, or sturdy shoes will be required. Open toe shoes such as, sandals, tennis shoes, and the like are prohibited.</p>
	<p>Damage to Eyes</p>	<p>Watch where you walk, especially around trees and brush with limbs sticking out. Exercise caution when clearing limbs. Advise wearing eye protection. 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.</p>
	<p>Insect Stings and Bites</p>	<p>Review the Job Hazard Analysis for Insect Stings/Bites with the volunteer.</p>
	<p>Tools and Equipment</p>	<p>Supervisors have the responsibility to:</p> <ol style="list-style-type: none"> a. Ensure that tools are not modified or used in any manner that increases the risk of injury. b. Ensure that tools remain in a safe condition through periodic inspection and repair. This includes tools furnished by Volunteers. c. Monitor Volunteers performance periodically to ensure proper methods are followed. d. Gloves shall be worn while performing work tasks.
	<p>Lifting</p>	<p>Ask for help if the load is too heavy. Do not try to lift or otherwise move material beyond abilities.</p>

7. TASKS/PROCEDURES (CONTINUED)	8. HAZARDS (CONTINUED)	9. ABATEMENT ACTIONS (CONTINUED) Engineering Controls * Substitution * Administrative Controls * PPE
<p>Environmental Health Considerations</p>	<p>Heat Stress</p>	<p>a. Remain constantly aware of the four basic factors that determine the degree of heat stress (air temperature, humidity, air movement, and heat radiation) relative to the surrounding work environment heat load.</p> <p>b. 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.</p> <p>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 volunteers from hot environments.</p> <p>c. Tailor the work schedule to fit the climate, the physical condition of volunteers, and mission requirements.</p> <ol style="list-style-type: none"> 1. A reduction of work load markedly decreases total heat stress. 2. Lessen work load and/or duration of physical exertion the first days of heat exposure to allow gradual acclimatization. 3. Alternate work and rest periods. More severe conditions may require longer rest periods and electrolyte fluid replacement.

7. TASKS/PROCEDURES (CONTINUED)	8. HAZARDS (CONTINUED)	9. ABATEMENT ACTIONS (CONTINUED) Engineering Controls * Substitution * Administrative Controls * PPE						
<p>Environmental Health Considerations (Continued)</p>	<p>Wet Bulb Globe Temperature (WBGT) Index</p>	<p>Curtail or suspend physical work when conditions are extremely severe (see attached Heat Stress Index).</p> <p>Compute a Wet Bulb Globe Temperature (WBGT) Index to determine the level of physical activity (take WBGT Index measurements in a location that is similar or closely approximates the environment to which volunteers will be exposed).</p> <p>WBGT THRESHOLD VALUES FOR INSTITUTING PREVENTIVE MEASURES</p>						
	<p>Wind</p> <p>Dusty Conditions</p>	<table border="0"> <tr> <td data-bbox="1155 706 1491 779">80-90 degrees F</td> <td data-bbox="1491 706 1974 779">Fatigue possible with prolonged exposure and physical activity.</td> </tr> <tr> <td data-bbox="1155 844 1491 917">90-105 degrees F</td> <td data-bbox="1491 844 1974 917">Heat exhaustion and heat stroke possible with prolonged exposure and physical activity.</td> </tr> <tr> <td data-bbox="1155 998 1491 1071">105-130 degrees F</td> <td data-bbox="1491 998 1974 1071">Heat exhaustion and heat stroke possible with prolonged exposure and physical activity.</td> </tr> </table> <p>Terminate all work during periods of high winds due to snag hazards.</p> <p>Dust masks will be worn while working in dusty conditions along with eye protection.</p>	80-90 degrees F	Fatigue possible with prolonged exposure and physical activity.	90-105 degrees F	Heat exhaustion and heat stroke possible with prolonged exposure and physical activity.	105-130 degrees F	Heat exhaustion and heat stroke possible with prolonged exposure and physical activity.
80-90 degrees F	Fatigue possible with prolonged exposure and physical activity.							
90-105 degrees F	Heat exhaustion and heat stroke possible with prolonged exposure and physical activity.							
105-130 degrees F	Heat exhaustion and heat stroke possible with prolonged exposure and physical activity.							

7. TASKS/PROCEDURES (CONTINUED)	8. HAZARDS (CONTINUED)	9. ABATEMENT ACTIONS (CONTINUED) Engineering Controls * Substitution * Administrative Controls * PPE	
<p>Emergency Evacuation Procedures</p>	<p>Illness/Injury</p>	<p>All Forest Service vehicles shall have first aid/infectious control kits. Each work crew or office group shall have at least one person currently certified to render first aid and CPR. If broken down on the open road use Forest Service two-way radio, cell phone, or call box to initiate call for EMS. At a facility with a telephone dial 911. Maintain communications with the 911 operator until help arrives. Render first aid to the sick or injured until relieved by a higher level medical responder. Do not abandon the patient. All volunteers treating patients shall observe Universal Precautions at all times. In remote work areas, it may be quicker to transport the injured patient out to meet with the EMS agency. Care shall be taken while moving and transporting the injured and communications must be maintained. Use Blood Borne Pathogen precautions. Notify your supervisor of the injury. Complete necessary paperwork.</p>	
<p>10. LINE OFFICER SIGNATURE DERRICK MORRIS Digitally signed by DERRICK MORRIS Date: 2021.06.15 15:56:58 -04'00'</p>		<p>11. TITLE Forest Supervisor</p>	<p>12. DATE</p>

EDWARD HUNTER Digitally signed by EDWARD HUNTER
 Date: 2021.07.14 10:38:02 -04'00'

ANDREW GASTON Digitally signed by ANDREW GASTON
 Date: 2021.07.12 16:51:03 -04'00'

JHA Instructions (References-FSH 6709.11 and .12)

The JHA shall identify the location of the work project or activity, the name of the volunteer(s) writing the JHA, the date(s) of development, and the name of the appropriate line officer approving it. The supervisor acknowledges that volunteers 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 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:

SIGNATURE	DATE	SIGNATURE	DATE
_____		_____	
Work Leader			
_____		_____	
_____		_____	
_____		_____	
_____		_____	

HEAT STRESS INDEX																
Actual Thermometer Reading (F°)																
RELATIVE HUMIDITY	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104
HUMIDITURE F° (Equivalent Temperature)																
10 %	68	70	72	75	77	78	80	82	85	87	89	91	93	95	97	98
20 %	70	72	75	77	79	81	84	86	88	90	93	95	97	99	101	104
30 %	73	75	77	78	80	83	85	87	90	92	95	98	101	105	108	110
40 %	74	76	78	79	81	85	87	89	92	96	100	104	106	110	117	120
50 %	75	77	79	81	84	86	90	93	96	100	105	108	110	120	125	132
60 %	75	77	80	83	86	89	92	95	100	106	111	120	125	132		
70 %	75	77	81	85	89	91	96	100	106	115	122	128				
80 %	76	78	83	86	91	95	100	106	114	122						
HUMIDITURE F°	Below 80		80 - 90		90 - 105			105 -130			Above 130					
DANGER CATEGORY	NONE		CAUTION		EXTREME CAUTION			DANGER			EXTREME DANGER					
NONE	Little or no danger under normal circumstances.															
CAUTION	Fatigue possible, if exposure is prolonged and there is physical activity.															
EXTREME CAUTION	Heat cramps and heat exhaustion, if exposure is prolonged and there is physical activity.															

<p>DANGER EXTREME DANGER</p>	<p>Heat cramps or exhaustion likely; heat stroke possible, if prolonged and there is physical activity.</p> <p>HEAT STROKE IMMINENT!</p>
---	---

NOTE: Add 10 ° F when protective clothing is worn and add 10 ° F when in direct sunlight.

WIND CHILL INDEX												
Wind Speed (mph)	Actual Thermometer Reading (F°)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-21	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-36	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-124
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-49	-67	-82	-98	-118	-129	-145
40	26	10	-5	-21	-37	-53	-69	-85	-100	-116	-132	-148
	LITTLE DANGER (for properly clothed person)				INCREASED DANGER				GREAT DANGER			
	DANGER OF FREEZING EXPOSED SKIN											

NOTE: Wind speeds greater than 40 mph have little additional effect.