

<p>U.S. Department of Agriculture Forest Service</p>	<p>1. WORK PROJECT/ACTIVITY Cave & Bat Surveys</p>	<p>2. LOCATION</p>	<p>3. UNIT</p>		
<p>JOB HAZARD ANALYSIS (JHA) References-FSH 6709.11 and -12 (Instructions on Reverse)</p>	<p>4. NAME OF ANALYST</p>	<p>5. JOB TITLE</p>	<p>6. DATE PREPARED</p>		
<p>7. TASKS/PROCEDURES</p>	<p>8. HAZARDS</p>	<p>9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE</p>	<p>10. POST ABATEMENT ACTION RISK RATING (from the Severity/Probability Matrix)</p>		
			<p>Severity</p>	<p>Probability</p>	<p>Risk Code</p>
<p>Bat cave survey work may involve long hikes over uneven ground to access caves and walking or crawling within caves. Searching for caves requires walking over loose rock where vegetation may obscure the ground surface. Searching for caves may involve walks in hot summer heat or snowmobile trips in below freezing weather and/or in snow/rain. Entering caves may require crawling on hands and knees or on stomach. Cave entries may be icy and slippery. Cave floors frequently have unstable rock. Searching within caves may require ascents/descents of up to 40 feet on unstable rock for several hours. A few caves require descent on cable ladders to enter. Workers may bump their heads on low cave ceilings.</p>	<p>Cave surveys and communication</p>	<ul style="list-style-type: none"> • If inexperienced with caves, discuss survey plan and map ahead of time with individual knowledgeable about cave or cave area, preferably someone experienced in caving such as a local caving organization. Inquire if anyone local is skilled in cave search and rescue and can serve as a sign-out contact if cave is particularly long or difficult. Never cave alone. • Use sign in/sign out board and/or dispatch as well as someone more knowledgeable about your survey plan and map (see above). • Allow plenty of time to complete the survey. • Use minimum of 2 people inside cave and usually no more than 3 or 4 to reduce noise to bats. Use a spotter outside caves longer than 200 feet. Spotter should take FS radio, cell phone, first aid kit, and layered clothing. • Assign trip leader for each cave survey before going into cave. • Determine method of survey and type of communication before going in cave. Avoid talking or whispering to avoid disturbing bats. • Only survey 1 direction going into cave unless no bats were counted—then bats can be countered on return. • Discontinue survey if any individual can not keep up with survey. Pace should be set to slowest member of group. 	<p>Catastrophic</p>	<p>Remote</p>	<p>High 2</p>

	Vehicle accidents	<ul style="list-style-type: none"> • Ensure that vehicles are operating properly and all required safety equipment is available and working. • Make sure windshields are clean inside and out and lights set at appropriate level. • Have Forest Service radios available inside vehicles and on your person and other means of communication such as cell phones or walkie/talkies. • Observe speed limits and traffic conditions. 	Catastrophic	Likely	High 1
	Slips, falls, cuts, hand and knee scrapes, bruises, head injuries	<ul style="list-style-type: none"> • Bring 3 sources of light per person (headlamps preferred) and carry extra batteries. • Wear caving/climbing helmet or hard hat. Be aware of ceiling height and move up slowly from bended position. • PPE should include first aid kit, water, food, layered clothing, hat, gloves, emergency shelter or large garbage bag with candle, rope, flares, flagging and whistle. • Wear sturdy protective footwear that covers ankles (minimum 6 inch height when measured from bottom of heel). • Wear protective gloves when in caves. • Always use 3 points of contact (2 hands and a foot or 2 feet and 1 hand). • Wear kneepads and elbowpads (if needed). • Walk slowly and stop before looking for bats. 	Catastrophic	Occasional	High 2
	Hypothermia	<ul style="list-style-type: none"> • Allow plenty of time to complete the survey. Hikes/walks to caves may occur in hot conditions or in cold/snowy conditions. Cave temperatures range from 33 to 50 degrees F. Bring layered clothing suitable for both the trek to the cave, the survey inside cave, and the trek back to the vehicle. Bring change of clothing in case clothes get wet during hike to cave. Don't begin survey with damp clothing. • Carry hat and warm gloves in pack. Wear pants that are protective against rocks and are 	Critical	Remote	Medium 3

		<p>neither too restrictive (tight) nor too loose to get caught on rocks. Coveralls are recommended.</p> <ul style="list-style-type: none"> • Walk slowly to avoid sweating. • Pace should be set according to slowest person. Keep together. 			
	Poisonous insects/snakes	<ul style="list-style-type: none"> • Always look first before placing hands in rocks, crevices, or brushy areas • When using an acoustic detector with head phones, watch where you are walking. • Avoid walking in to brushy areas that might provide cover for poisonous snakes without first listening and looking for them. 	Catastrophic	Remote	High 2
	Disease transmission to humans	<ul style="list-style-type: none"> • Avoid exposure near large guano deposits and/or rodent feces. Use of a mask or respirator may be warranted and may require a fitting. Contact your safety manager if unsure. • Do not touch or handle live, injured or dead bats during surveys. • Although rabies is present in bat colonies at low levels, it can be transmitted from a rabid bat to a human through a bite and potentially from direct contact of infected bat saliva into the eyes, mouth, or nose. Only employees/volunteers with pre-exposure rabies vaccinations and protective titers and current tetanus shots are allowed to handle live, injured or dead bats. If accidental ungloved contact or a bat bite occurs, wash area with soap and water. • If there is a suspected exposure to rabies, consult with supervisor, collect the bat if possible (only by someone who has received pre-exposure rabies vaccinations and protective titers and current tetanus shots), and follow the <i>Algorithm for prevention of rabies after animal bites in Oregon State of Oregon</i> procedures for potential rabies exposure 	Catastrophic	Unlikely	Medium 3

		http://public.health.oregon.gov/DiseasesConditions/DiseasesAZ/Pages/disease.aspx?did=41			
	Disease transmission to bats	<ul style="list-style-type: none"> • To avoid spreading of white-nose syndrome between caves, follow decontamination protocols https://www.whitenosesyndrome.org/topics/decontamination • If skin samples or bats need to be collected for WNS submission, follow latest USGS National Wildlife Health Center recommendations. 	Catastrophic	Remote	Medium 3
11. LINE OFFICER SIGNATURE		12. TITLE District Ranger		13. DATE	

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 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).

Block 10: The values for Severity, Probability, and the overall Risk Assessment Code (RAC) will correspond to the Risk Management Matrix (attached).

Block 11: The JHA must be reviewed and approved by the appropriate manager / supervisor, as identified in the Risk Decision Authority Matrix.

Block 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.

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
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

6713.4 - Exhibit 01
Risk Management Matrix

Safety Risk Assessment Codes						
HAZARD PROBABILITY						
		Frequent	Likely	Occasional	Seldom	Unlikely
		A	B	C	D	E
SEVERITY	Catastrophic	I	Extremely High (RAC 1)	High (RAC 2)		Medium (RAC 3)
	Critical	II	Extremely High (RAC 1)	High (RAC 2)	Medium (RAC 3)	Low (RAC 4)
	Marginal	III	High (RAC 2)	Medium (RAC 3)	Low (RAC 4)	
	Negligible	IV	Low (RAC 4)			

6713.4 – Exhibit 02

Severity	Effect
Catastrophic I	Death or permanent disability, system loss, major property damage
Critical II	Permanent partial disability, temporary total disability in excess of three months, major system damage, significant property damage
Marginal III	Minor injury, lost workday mishap, compensable injury/illness, minor system damage, minor property damage
Negligible IV	First aid or minor medical treatment, minor system impairment

6713.4 – Exhibit 03

Probability	
A. Frequent	The event occurs often, frequently, or with regularity in one's career or the life cycle of equipment items
B. Likely	The event occurs periodically with some regularity but not frequently enough to be predictable
C. Occasional	The event occurs sporadically but not with consistent regularity or predictability in ones career of the life cycle of equipment
D. Remote	Possible to occur but the chances of the event occurring are remote
E. Unlikely	In this case, it is unlikely the event will ever occur