HACCP Step 1 – Activity Description for Negrito Firebase

Activity Description	
Facility: US Forest Service, Gila National Forest, Negrito Fire Base, New Mexico	Site: All areas within Negrito Firebase
Project Leader: Forrest Burnswell	Activity: Fire Management Operations, including the Gila Hotshot crew barracks and Heliattack base camp
Activity Leader: Gila Hotshot Foreman, Helibase Manager, or other Supervisors and Incident Commanders (IC)	
Address: Negrito Firebase 3005 Camino del Bosque Silver City, New Mexico 88061	e.g. Stream Restoration, Fire Management, Aquatic Survey/Monitoring, Refuge Farming, Fish Production, T & E Recovery/Listing Survey
Phone: 505.388.8201	

Project Description
i.e., Who; What; Where; When; How; Why

As part of the Federal Interagency Fire Management community, the U.S. Forest Service's Negrito Firebase is an important field station used for multiple fire management-related purposes. Negrito is situated within the Gila National Forest in southwestern New Mexico. The firebase is home to the Gila Hotshots and Heliattack base, and is frequently used as a staging area for additional fire fighting crews, support staff, engines, supplies, helicopters and support equipment.

A public road provides access to the Negrito Firebase, which also provides access to the trailhead leading into the Gila Wilderness and other backcountry areas within the Gila National Forest. The trailhead provides parking and a water source for backpackers. Permits are required.

Fire management operations consist of a variety of activities, including a bunkhouse for the Gila hotshots (elite hand crew using primarily hand tools), a fire cache for storage of supplies, fire engines carrying water, support staff, and helicopters. Helicopters are used for scouting, ferrying personnel, and for water drops. As the Negrito Firebase is a staging area, crews and equipment from out of the area use the site as a staging area and bunkhouse with parking and storage capacity for tools, supplies and equipment for the fire cache.

HACCP Step 2 – Identify Potential Hazards at Negrito Firebase

(to be transferred to column 2 of HACCP Step 4 – Hazard Analysis Worksheet)

Hazards: Species Which May Potentially Be Moved/Introduced
Vertebrates: The primary means of transferring vertebrates relates to the use of water to quell fires. Fish, frogs, salamanders and possibly other aquatic species may be picked up by a fire engine when drafting water from a natural source such as a stream or pond. Fish may be picked up by helicopter bucket operations in and deposited to a new location. As for Hantavirus vectors, equipment and supply storage areas may harbor mice or other rodents that can spread Hantavirus to humans through inhalation. The potential presence of naturally occurring deer mice and other rodent carriers of Hantavirus is significant in New Mexico.
Invertebrates: Spiders and insects could be living in stored equipment and clothing. Aquatic invertebrates could be picked up in helicopter bucket operations and by fire engines drafting from natural water sources.
Plants: There area numerous noxious or invasive plant species which could be relocated by all types of fire operations. Of particular concern are seeds and other parts of invasive species not native to New Mexico or North America "hitchhiking" on shoes, clothing, and equipment associated with fire operations. Backpackers using the trailhead may introduce noxious plants via their vehicles, clothing and gear, and could export seeds from the spotted knapweed patch. The single invasive species currently established at the Negrito Firebase is spotted knapweed. The single existing infestation is spreading and needs to be managed towards the goal of elimination while ensuring that operations do not spread the infestation further. Aquatic plants are another consideration as they may cling to a helicopter bucket.
Other Biologics (i.e. disease, pathogen, parasite): Hantavirus, which is primarily spread by atomized rodent feces and urine (as in the scenario of stirring up an infested area through cleaning activities that disturb the droppings and put viral particles into the air) is a significant hazard in any sites that may harbor rodents (storage areas, etc.).
Physical Pathways (i.e., materials, debris, mud in tires, etc.): Physical pathways involving fire operations are numerous and include shoes, sox and other clothing, tires, vehicle chassis, equipment parts, hand tools, drafted water, helicopter landing sleds, lifting nets, and the bucket used in water drops. Public use by backcountry hikers at the site also presents pathways from vehicles, shoes, clothing and backpacking gear.

HACCP Step 3 – Negrito Firebase Flow Diagram

Flow Diagram Outlining Sequential Tasks to Complete Activity/Project
Described in HACCP Step 1 – Activity Description
(to be transferred to column 1 of the HACCP Step 4 – Hazard Analysis Worksheet)

Task 1	Develop Pathway Management Program for Negrito Firebase to implement HACCP procedures. Communicate program to all staff, visitors (via hiking permit system) and in orientation/briefings to new hires and transient personnel staging at the base, highlighting the need to manage pathways and document HACCP procedures. Include Pathway Management steps and HACCP procedures in all Fire Management Planning documents for wildfire, prescribed fire, fuel break maintenance, hazard reduction, and pre-suppression activities. Develop condensed "Field Checklist" and "Log Book" to aid Crew Leaders and vehicle and equipment operators in implementing HACCP procedures and documentation of compliance.

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Task 2	Develop program to reduce the human health risks associated with hantavirus, including application of Integrated Pest Management to the control of rodent populations in and around firebase buildings, developing occupational safety procedures for cleaning areas where rodents may have been (a.k.a. universal precautions, such as wearing dust masks, gloves and using bleach solution to control dust) and implementing an employee awareness program which is also included in briefings to new hires, TDY employees and visitors.

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Task 3	Design, construct and designate cleaning stations for cleaning and decontaminating shoes and clothing, and for pressure washing equipment to remove mud, seeds and plant debris from all surfaces of vehicles and equipment, including the underside of the chassis. Pressure washing station requirements include approved engineering specifications for water catchment and management as specified by the State of New Mexico.

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Task 4	For arriving personnel and equipment: Ensure that all personnel and equipment returning to/arriving at Negrito have been cleaned and are free of mud, seeds and plant parts. HACCP documentation of cleaning logged and verified. Personnel and equipment that has not been cleaned proceed to Tasks 6 and 7 & document.

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Task 5	For departing personnel and equipment: Identify personnel and equipment that were deployed in the field in off-road or in other situations where mud, seeds and plant parts may have been encountered. Also, identify any fire trucks that have drafted from non-domestic water sources in the field, helicopter skids, and nets and buckets used to make water drops.

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Task 6	Clean vehicles and equipment at the designated cleaning station, ensuring that all mud, seeds and plant parts are removed. Clean dirt and mud from helicopter skids, and inspect and remove debris from nets and water buckets.

HACCP Step 4 – Negrito Firebase Hazard Analysis Worksheet

1 Tasks (from HACCP Step 3 – Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards probable? (yes/no)	4 Justify evaluation for column 3	5 What control measures can be applied to prevent undesirable results?	6 Is this task a critical control point or vital to the program? (yes/no)
Task 1 Establish and implement HACCP Program and procedures for pathway management at Negrito Firebase including field checklist and log	Vertebrates No	no			Yes
	Invertebrates No	no			Yes
	Plants No	no			Yes
	Others No	no			Yes
Task 2 Develop procedures to minimize risks from Hantavirus	Vertebrates	Yes	Deer mice and other rodents	Rodent control program using IPM	Yes
	Invertebrates	Yes	Possible spider bites	Protective clothing and caution	No
	Plants	No			No
	Others	yes	Hantavirus via atomized rodent urine and feces	Use universal precautions, wear PPE and use safe procedures when handling stored materials or when cleaning area	Yes

HACCP Step 5 – Negrito Firebase HACCP Plan Form

HACCP Plan Form (all CCP's or "yes's" from column 6 of HACCP Step 4 – Hazard Analysis Worksheet)								
			Monitoring					
Critical Control Point or Procedure (CCP)	**Significant Hazard(s)**	**Limits for each Control Measure**	**What**	**How**	**Frequency**	**Who**	**Evaluation & Corrective Action(s) (if needed)**	**Supporting Documentation (if any)**
T1 Program Implementation	**Lack of information &compliance**	**Inform/train all staff on program requirements**						
T2 Hantavirus abatement	**Hantavirus**	**Any exposure**						
T3 Create cleaning stations	**Invasive plants**	**Program item**						
T4 Arriving protocal	**Invasive plants**	**Program item**						
T5 Departing protocal	**Invasive plants**	**Program item**						
T6 Clean vehhicles and equipment	**Invasive plants**	**Any field work**						
T7 Clean clothing and hand tools	**Invasive plants**	**Any field work**						
T8 Check for plant growth	**Invasive plants**	**Any plant growth**						

T9 Log HACCP compliance	**Invasive plants and Hantavirus**	**Any HACCP procedure**						
T10 Program review	**Any hazards**	**Every year**						

Facility: Negrito FireBase, Gila National Forest	**Activity: Fire Management Operations**
Address: 2003 Camino del Bosque Silver City, NM 88061	
Signature: **HACCP Plan was followed.**	**Date:**

1 Tasks (from HACCP Step 3 - Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards probable? (yes/no)	4 Justify evaluation for column 3	5 What control measures can be applied to prevent undesirable results?	6 Is this task a critical control point? (yes/no)
Tasks # 3 Establish cleaning stations for crew and vehicles and equipment	Vertebrates	no			no
	Invertebrates	no			no
	Plants Various seeds and plant parts	yes	seeds and plant parts will be removed	Cleaning sites designed with containment	yes
	Others Mud, plant debris	yes	dirt and mud with seeds present	Cleaning sites designed with containment	yes
Task # 4 Arriving crews and equipment perform HACCP verification and, if needed, cleaning and documentation	Vertebrates	no			no
	Invertebrates	no			no
	Plants	yes	Ensures HACCP procedures done	verification and documentation, HACCP briefing	Yes
	Others	yes	Ensures HACCP procedures done	Verification and documentation, HACCP briefing	Yes

1 Tasks (from HACCP Step 3 - Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards probable? (yes/no)	4 Justify evaluation for column 3	5 What control measures can be applied to prevent undesirable results?	6 Is this task a critical control point? (yes/no)
Task # 5 Departing crews and equipment – identify if field activities require cleaning, or if universal precautions for Hantavirus are needed (masks, other PPE, etc.)	Vertebrates	yes	Hantavirus in storage areas	IPM Program for rodent control and universal precautions	Yes
	Invertebrates	yes	Spiders in storage area	IPM for spider control & universal precautions (gloves)	No
	Plants	Yes	Seeds and parts	Establish cleaning stations & HACCP procedures	yes
	Others	Yes	Hantavirus in storage areas	Establish cleaning stations & HACCP procedures	yes
Task # 6 Clean vehicles, equipment and helicopter skids and equipment at designated stations	Vertebrates	no			no
	Invertebrates	no			no
	Plants	yes	Seeds and plant parts	Wash at cleaning station	yes
	Others	yes	Seeds and plant parts in mud	Wash at cleaning station	yes

1 Tasks (from HACCP Step 3 - Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards probable? (yes/no)	4 Justify evaluation for column 3	5 What control measures can be applied to prevent undesirable results?	6 Is this task a critical control point? (yes/no)
Task # 7 Clean crew shoes, clothing and hand tools. Shoes are to be removed and emptied. Clean dirt and debris from sox. Clean hand tools.	Vertebrates	no			no
	Invertebrates	no			no
	Plants	yes	seeds	Follow cleaning procedure	yes
	Others	yes	Seeds and plant parts in mud	Follow cleaning procedure	yes
Task # 8 Check for germination and growth of potential invasive plants at cleaning stations monthly during growing season and implement controls	Vertebrates	no			no
	Invertebrates	no			no
	Plants	yes	Reduces likelihood of spread	Log in documentation of HACCP	yes
	Others	yes	Reduces likelihood of spread	Log in documentation of HACCP	yes

1 Tasks (from HACCP Step 3 – Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards probable? (yes/no)	4 Justify evaluation for column 3	5 What control measures can be applied to prevent undesirable results?	6 Is this task a critical control point or vital to program? (yes/no)
Task # 9 Document completion of HACCP procedures	Vertebrates	no			no
	Invertebrates	no			no
	Plants	yes	Reduces chances of spread	Log documentation HACCP was done	yes
	Others	yes	Reduce chances of spread	Log documentation HACCP was done	yes
Task # 10 Review, evaluate and revise HACCP procedures for pathway management annually and communicate problems & changes to personnel	Vertebrates	no	Ensures HACCP program quality	Annual review	yes
	Invertebrates	no	“	“	yes
	Plants	no	“	“	yes
	Others	no	“	“	yes

1 Tasks (from HACCP Step 3 - Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards probable? (yes/no)	4 Justify evaluation for column 3	5 What control measures can be applied to prevent undesirable results?	6 Is this task a critical control point? (yes/no)
Task #	Vertebrates				
	Invertebrates				
	Plants				
	Others				
Task #	Vertebrates				
	Invertebrates				
	Plants				
	Others				

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Task 7	Remove dirt, mud, seeds and plant parts from shoes and clothing of crew. Remove and empty shoes and clean debris from sox. Clean hand tools.

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Task 8	Inspect cleaning stations monthly during growing season (April-October) for plant growth and implement controls to stop possible spread.

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Task 9	Review Field Checklist and log in documentation that HACCP procedures were followed and completed.

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Task 10	Review, evaluate and refine HACCP procedures for pathway management at the Negrito Firebase annually.