Date of Report: October 17th, 2002

USDA - FOREST SERVICE / BURNED - AREA REPORT

(Reference FSH 2509.13)

PART 1 … TYPE of REQUEST

A. Type of Report

(X) 1. Funding request for estimated WFSU - SULT funds

( ) 2. Accomplishment Report

( ) 3. No Treatment Recommendation

B. Type of Action

( ) 1. Initial Request
(Best estimate of funds needed to complete eligible rehabilitation measures)

(X) 2. Interim Report … # 2

(X) Updating the initial funding request based on more accurate site data and design analysis

( ) Status of accomplishments to date

( ) 3. Final Report - following completion of the emergency work

PART 2 … BURNED - AREA DESCRIPTION and FIRE LOCATION

A. Fire Name: Oak Hills

B. Fire Number: UT - UIF - 18122

C. State: Utah

D. County: Utah … # 049

E. Region: R4 / Intermountain

F. Forest: Uinta … # 0418

G. District: D2 / Pleasant Grove

H. Date Fire Started: 07-30-2000

I. Date Fire Contained: 09-25-2000

J. Time Fire Contained: 1800

K. Suppression Costs: $ 3,500,000 (estimated from the Oracle Database managed by Fire Dispatch)

L. Fire Suppression Damages Repaired with EFFS – PF12 Funds:

- Fireline Waterbarred (miles) 2.5 miles … mostly upon private lands
- Fireline Re-seeded (miles) 2.5 miles … same as above
- Other Damages … (identify) None

M. Watershed Number: 1602020106 … Utah Lake (5th field HUC)

N. NFS Acres Burned: 919 (Wilderness) **Total Acres Burned:** 1,028 (determined by GPS 10-2001)

Other Land Ownerships … list as follows:

(X) Private … 109 acres ( ) State of Utah ( ) USDI - BLM ( ) Other

O. Vegetation Types:	Mixed conifers consisting of White fir and Douglas fir were present on the north aspects; scattered Gambel oak with maple and curlleaf mountain-mahogany occurred at the lower elevations or upon the warmer south and west facing aspects with small amounts of both mountain big sagebrush and pinyon - juniper intermixed throughout the burned-area.
P. Dominant Soils:	Lithic Haplustolls were mapped along the steep to very steep ridgetop areas with Typic Haploborolls, and Typic Argiborolls occurring under the mountain shrub plant communities, Pachic Haploborolls and Pachic Argiborolls had supported stands of Gambel oak and maples while Typic Cryoborolls, Mollic Cryoboralfs and Typic Cryoboralfs were located on the surrounding mountainsides under the mixed conifers. A few small areas were identified as Ustochreptic Calciorthids in association with limestone or dolomite contacts and supported sagebrush or pinyon – juniper trees.
Q. Geologic Types:	The Oquirrh Formation consisting of marine sandstones and limestone with inclusions of both Precambrian and Cambrian age quartzite deposits. A few small areas were derived from accumulations of dolomite … which is actually a secondary mineral.

R. Miles of Stream Channels by Order or Class:

Perennial - None Intermittent - 2.75 Ephemeral - 5.0

S. Transportation Systems: (occurring within the fire perimeter)

Trails … 0.55 miles (USDA - Forest Service) Roads … 0 miles (Private)

PART 3 … WATERSHED CONDITION / NFS PROBLEM INVENTORY

A. Mapping of the Burn Severity Zones: (1,028 total acres occur within the perimeter of the Oak Hills Fire – this information was updated using GPS and GIS technology during 10-2001)

227 High (22 %) 355 Moderate (34 %) 446 Low / Unburned (44 %)

B. Estimation of Water-Repellent soils: (10-14-2002)

(At this time … approximately 125 to 150 acres exhibit some degree of hydrophobic type conditions)

C. Rating Soils for Potential Erosion Hazards within the Fire Perimeter: (10-14-2002)

High	Moderate	Low
18 %	32 %	50 %

D. Potential for <u>Accelerated Erosion Losses</u> : (10-14-2002)

On September 6th of 2002 … a debris flow carrying roughly 10,000 cubic yards flushed out of Preston Canyon into the community of Alpine, Utah; in addition, a smaller flow – estimated to be about 2,500 cubic yards came out of Smooth Canyon and flowed into the east side of town. Both flows were triggered by a storm that approached the magnitude of a 50 Year – Storm Event with respect to its intensity and rainfall amounts.

E. Total Sediment Potential: 3,000 tons / mile ^{2}

PART 4 … HYDROLOGIC DESIGN FACTORS with <u>CALCULATED RISK and CLIMATE EVALUATIONS</u>

Preston Canyon Area

A. Estimated Vegetative Recovery Period: 30 to 60 years (conifers)
B. Design Chance of Success: 80 percent
C. Equivalent Design Recurrence Interval: 10 year
D. Design Storm Duration: 1.0 hour
E. Design Storm Magnitude: 0.68 inches
F. Design Flow: 8 ft^3 / sec / mi^2
G. Estimated Reduction in Infiltration: 30 percent
H. Adjusted Design Flow: 131 ft^3 / sec / mi^2

<u>PART 5 … SUMMARY OF SURVEY & ANALYSIS</u>

A. Describe the Watershed Emergency:

- **<u>THREATS TO HUMAN LIFE AND PROPERTY</u>** …Three debris flows have occurred since the Oak Hills wildfire of 2000. One event occurred on August 21, 2001 in Preston Canyon. No property damage occurred. Two debris flows occurred on September 6, 2002 after 0.5 inches of rain fell during a 15-minute period. This intensity equates to a 25 to 50 year storm, which is beyond the realm where slope treatments effectively reduce risk. Sediment and water damaged one house below Preston Canyon

during these events. The BAER team feels that no additional slope or channel treatments are needed on Forest. Rich Giraud, of the Utah Geologic Survey, indicated that the hillslopes did not contribute significant amounts of sediment to the September 6th 2002 debris flows relative to the in-channel deposits. New rill development is limited, except for about 9 acres within the west facing slope at the top of the drainage, indicating that overall there has been positive slope recovery since the wildfire and that the recovery is expected to continue. The best strategy at this juncture is for the residents and city government of Alpine to work with the NRCS to protect the existing developments from the permanent long-term risks to natural hazards. Diversion structures and / or debris basins on private lands are the most cost effective and meaningful treatments that can be done at this time.

- **LOSS OF SOIL PRODUCTIVITY** … The Oak Hills Fire burned-area has been seeded and mulched for protection of long-term soil productivity. Reconnaissance of the burned-area has shown that there has not been significant formation of new rills or gullies. No additional land treatments are being recommended for protection of long-term soil productivity.

- **VEGETATIVE GROUND COVER** **...** Residual plant species of Gambel oak and perennial grasses have covered the ground in many parts of the Oak Hills Fire. However, the upper, north-facing slopes of Preston Canyon still lack a satisfactory amount of protective ground cover under the mixed conifer trees. Debris flow events from Preston Canyon created a desire to assess the possible need for additional treatments. It was determined that the majority of the debris that found its way to the mouth of the canyon was from the channel and not from the burned-areas above. Although vegetative stability is lacking in portions of the burn … the majority of the burn appears to be stable. No additional vegetative treatment is recommended for the Oak Hills Fire.

B. Emergency Treatment Objectives:

The primary objective of the proposed emergency rehabilitation is to take prompt actions deemed reasonable and necessary to effectively protect, reduce or minimize significant threats to human life and property; and prevent unacceptable resource degradation. The emergency treatments being recommended by the Uinta NF / BAER Team are specifically designed to achieve the following results:

1) encourage public and political consideration of and mitigation for natural long-term debris flow and flooding,

2) encourage soil stabilization and recovery of hydrophobic soil conditions through vegetative regeneration to maintain long-term productivity and to meet Regional and Forest Plan standards,

3) reduce the possibility that flood flows could threaten residential properties in the communities of Alpine, Utah,

C. Expected Probability of Completing Treatments Prior to First Major Damage-Producing Storm:

Land … N / A Channel … N / A Roads … N / A Other … N / A

D. Probability of Accomplishing Treatment Success:

< ---------- Years after Treatment ---------- >

	1	3	5
♦ **Land**	**65 %**	**80 %**	**90 %**
♦ **Channel**	**N / A**	**N / A**	**N / A**
♦ **Roads**	**N / A**	**N / A**	**N / A**
♦ **Other**	**N / A**	**N / A**	**N / A**

E. Cost of Taking No-Action: (including potential loss) the estimated value of the properties is approximately $ 3,000,000; a few homes are at-risk to episodes of flooding and 2 properties are quite vulnerable, due to their locations, to continued debris flows. (determined by Interim BAER Report # 1 – submitted to the Regional Office 10-11-2001)

F. Cost of the Selected Alternative: (including loss) $ 50,000

G1. Skills Represented on the Initial / Burned-Area Survey Team:

(X) Soils	**( ) Geology**	**( ) Timber**	**( ) TES … Plants**
(X) Hydrology	**( ) Landscape Arch.**	**( ) Wildlife**	**( ) Fire Dispatch**
(X) Botany	**( ) Helicopter Crew**	**( ) Research**	**( ) Archeology**
( ) GIS Staff	**( ) Range Mgt.**	**( ) District Staff**	**( ) Engineering**
( ) Fisheries	**( ) USDA – NRCS**	**( ) Utah - DWR**	**( ) Lands**

G2. Skills Represented on the Interim / Burned-Area Survey Team:

(X) Soils (2)	**( ) Geology**	**( ) Timber**	**(X) TES … Plants**
(X) Hydrology	**( ) Landscape Arch.**	**( ) Wildlife**	**(X) Fire Dispatch**
(X) Plant Ecology	**(X) Provo Helitacks**	**( ) Research**	**( ) Archeology**
(X) GIS Staff	**( ) Range Mgt.**	**( ) District Staff**	**( ) Engineering**
( ) Fisheries	**( ) USDA – NRCS**	**( ) Utah - DWR**	**( ) Lands**

Team Leaders: Bob Gecy (Hydrologist / Uinta National Forest - Initial BAER Report)
Michael D. Smith (Soil Scientist / Fishlake National Forest - Interim BAER Report # 2)

Phone: (435) - 896 - 9233 / ext. # 1071 **E-Mail:** mdsmith01@fs.fed.us

RECOMMENDED TREATMENTS

National Forest System Lands

None

SUGGESTED TREATMENTS

Private Lands

- **Land Treatments** … N / A

- **Channel Treatments** … construct permanent diversion ditches and / or debris basins below Preston, Willow, and Smooth Canyons to protect homes and properties in the town of Alpine, Utah.

- **Roads and Trail Treatments** … N / A

PART 6 … EMERGENCY REHABILITATION TREATMENTS & SOURCE OF FUNDS BY LAND OWNERSHIP(s)

A1. Primary Land Treatments

| < ---------- Recommended Treatments ---------- > | < -- Suggested Treatments -- > |

NFS Lands **Other Lands**

Line Items	Units	Unit Cost $	Number of Units	WFSU–SULT $	Other $ WFLT03	Number of Units	UDWR $	EWP – Private $	Total $
N / A	---	---	---	---					---

A2. Supplemental Land Treatments

N / A	---	---	---	---					---

B. Channel Treatments

N / A	---	---	---	---					---

C. Roads, Trails and Other Treatments

N / A	---	---	---	---					---

D. Early Warning System / Remote Automated Weather Stations (RAWS)

N / A	---	---	---	---					---

E1. Interim BAER Evaluation / Administrative Support Services

BAER Team (New Survey and Interim Report)	Job	$ 3,150	1	$ 3,150					$ 3,150
BAER Team (travel - 4 people)	Job	$ 700	1	$ 700					$ 700

BAER Team Helicopter / Daily Availability Fee (Type III … A-Star)	Day	$ 2,224	1	$ 2,224					$ 2,224
BAER Team Low Level Helicopter Flights (Type III … A-Star) (includes salaries for the Helitack Crew)	Hour	$ 542	3.1	$ 1,680					$ 1,680
BAER Team Supplies	Misc.	$ 125	1	$ 125					$ 125
Subtotal for Section E1	---	---	---	$ 7,879					$ 7,879

E2. Implementation and Effectiveness Monitoring Activities

(Forest Service … Implementation and Effectiveness Monitoring – Year 2 of 3 with respect to the year of treatment) **NOTE … if necessary, additional monitoring dollars can be acquired by the FS during Year 4 using a Interim type BAER Report to request and secure the appropriate funding; the individual to contact at the Intermountain Regional Office is Jeff Bruggink – R4 / Soil Scientist and BAER Coordinator at (801) - 625 - 5357**									
1) Soil & Water	Year 2	$ 4,175	1	$ 4,175					$ 4,175
2) Erosion Control Seeding	Year 2	$ 1,500	1	$ 1,500					$ 1,500
3) Noxious Weeds	Year 2	$ 420	1	$ 420					$ 420
Subtotal for Section E2	---	---	---	$ 6,095					$ 6,095
F. TOTALS	-	-	-	**$ 13,974**	-	-	-	-	**$ 13,974**

Fund Code for Implementing Authorized BAER Treatments … H48161

PART 7 … APPROVALS

1. **(acting) Forest Supervisor: /s/ Reese Pope** **Date: October 17th, 2002**

2. **Regional Forester: _____ Date: _____**

NARRATIVE – SPECIALIST REPORTS

Hydrologic Assessment – Oak Hills Fire

This report summarizes aerial and field observations made from October 11 to October 15, 2002. The previous initial and interim BAER assessments are incorporated into this report by reference. The purpose of this assessment is to evaluate the emergency treatments that were implemented and evaluate post-fire responses to storm events to determine if additional emergency actions are warranted. A monitoring report by Wes Christensen 2002 provides some additional information on the treatment implementation and effectiveness for this fire.

Summary: The Oak Hills fire burned in August of 2000. A debris flow occurred in Preston Canyon on August 21, 2001. Emergency seeding and mulching treatments were applied following this event. A second debris flow occurred on September 6, 2002 after 0.5 inches of rain fell during a 15-minute period. This intensity equates to a 25 to 50-year return interval storm. The entire storm delivered 0.58 inches of rain in 39 minutes. Sediment and water damaged one house below Preston Canyon as a result. There was a total of 0.79 inches of rainfall accumulation in the 24 hours preceding the event. According to Rich Giraud of the Utah State Geologic Survey, in-channel erosion was the primary source of sediment that generated the debris flow rather than rill and gully erosion from the hillslopes. A debris flow also occurred in Smooth Canyon, a less severely burned tributary immediately to the south of Preston Canyon. No damages were reported. An unnamed drainage on the south side of Smooth Canyon showed a flood response to the September 6th storm, but it did not result in a debris flow or property damage. The straw mulch and seeding treatments from 2001 have been somewhat effective in reducing the surface erosion potential and in promoting vegetative recovery, but less so than what has so far occurred on the Springville Fire. The straw mulch is no longer visible from the air on about 9 acres of the steep west-facing slope near the top of the Preston drainage. However, the overall vegetative and hydrologic recovery is positive.

Recommendations: No additional treatments are needed at this time on National Forest lands. This perspective is based on the slope and vegetative recovery that has occurred to date, from the fact that the generating storm was unusually intense, and because hillslope erosion did not appear to be a significant source of the sediments bulked in the September 6th debris flow. The suite of emergency slope treatments used in BAER typically is only reasonably effective for storms with less than a 10-year return interval. The Oak Hills Fire will be starting its fourth year of recovery in August of 2003 so the more frequent storms of lesser intensity are not expected to generate debris flows in the future. However, the City of Alpine and its residents must recognize that the debris flow and landslide hazards are permanent, and that the risk is present even without the watersheds being damaged by fire. Debris flows, rock falls, and other mass failures are a permanent hazard to the houses on the alluvial / debris fans below the mouths of the canyons. Prevention, meaning leaving these fans undeveloped or not permitting new development, is the best line of defense. However, the City and potentially affected residents should work with the NRCS and the Division of Water Rights (who regulate the construction of high hazard dams) to build properly sized and located debris basins and / or diversion structures that will protect the existing developments. A larger area than just below the fire should be evaluated so that treatments are optimized. For example, one house below Preston Canyon is also endangered by natural hazards from Willow Canyon. The final solution should accommodate the risks from both canyons.

(Dale Deiter – Hydrologist)

MONITORING PLAN

♦ Introduction: Why Monitor?

Monitoring is the periodic assessment of BAER treatments to evaluate their success and / or failure, recommend adjustments to treatments and report on these findings to management. Forest Service Manual 2523.03 directs that the implementation and effectiveness of treatments, as well as the consequences of decisions not to treat certain areas, will be monitored. This plan will assess BAER measures taken to assist in rapid recovery of the burned sites and nearby lands and resources affected by the burned sites. Direction in this monitoring plan complies with the Uinta National Forest Land and Resource Management Plan. The Forest Service Handbook 2509.13, Section 61.1 requires that, as a minimum, the following conditions be monitored:

1. The effectiveness and proper functioning of rehabilitation measures, especially road drainage facilities and channel structures.
2. Need for re-treatment, maintenance and removal of temporary structures.
3. Quality and quantity of water leaving the burned area and the location and causes of problems.
4. Rate of recovery of vegetation.
5. Effects of resource utilization, restoration activities and emergency rehabilitation measures on each other.

District and Supervisors office personnel (with any requested assistance) will be assigned by the Leadership Team to conduct the implementation and the effectiveness monitoring (FSH 2509.13 Section 61.04).

♦ Types of Monitoring Planned:

♦ Effectiveness Monitoring: Did the expected response occur?

This monitoring is specifically designed to answer the question: Did the BAER treatments provide the planned protection and rehabilitation of the burned area? Said another way, have the objectives of the treatments been met and if not, why?

Are the emergency treatments successful in: ….. protecting long-term soil productivity,

….. preventing the deterioration of water quality,

….. reducing the threats to human life and property and allowing for the management of ecosystems in their properly functioning condition?

Specific objectives of the treatments are described below:

Broadcast Seeding: Establish vegetative cover on the site quickly to:

- ✓ stabilize severely burned soils to maintain long-term productivity and meet Regional and Forest Plan standards,
- ✓ prevent production and delivery of off-site erosion to the stream channel network,
- ✓ reduce overland flow caused by rain-drop splash that seals the soil surface,
- ✓ and prevent the spread of existing noxious weed populations.

Year Two Effectiveness Monitoring (relative to year of initial treatment):

- ♦ Has vegetation become established from the broadcast seeding efforts?
- ♦ Are seeded native species able to compete with non-natives?
- ♦ Does the seeding appear to be helpful in providing ground cover and preventing erosion?

Aerial Mulching: Provide immediate ground cover to:

- ✓ protect soil surface from raindrop impact and overland flow,
- ✓ prevent production and delivery of off-site erosion to the stream channel network,
- ✓ and protect seeding treatment and provide moisture and shade to encourage plant growth.

Year Two Effectiveness Monitoring (relative to year of initial treatment):

- ♦ Is the straw protecting the ground surface and preventing increased erosion?
- ♦ Does the straw mulch appear to be encouraging plant growth?

♦ General Data Collection Procedures

The information to be recorded and documented will include the dates and type of emergency treatments implemented along with the total number of structures, acres and actual costs associated with these rehabilitation projects.

Photos will be taken of treatments and locations will be plotted using GPS. These photo points will be established above, within and below the various treatments. All photos will be collected using a digital camera in order to easily enter the images into interim and final monitoring reports.

Any monitoring item having a specific location will be mapped using GPS and loaded into the corporate GIS database (e.g., weed infestations).

The Implementation Team leader will ensure that all data being collected meets the established standards. Data collected for inclusion into the Forest GIS database will meet corporate standards.

For all monitoring projects, as a minimum, record:

- The dates of installation or accomplishment
- Name(s) of person(s) collecting data
- Types of equipment used
- Time for project completion (length of treatment)
- GPS location as well as a detailed map and narrative of directions to the site
- Short narrative explaining how the job was completed, any problems encountered and how they were solved
- Recommendations for continued use of the treatment on other fire rehabilitation projects considering both implementation and effectiveness concerns.

♦ **Specific Data To Be Collected**

Soils and Hydrology:

- Establish photo points
- Monitoring time frames are before, during and immediately following large precipitation events
- Document evidence of mass wasting
- Describe and map the types of damage such as overland flow and the types of lands or resources damaged, such as rangelands, pastures, or riparian zones

Erosion Control Seeding:

- Is there between 50 and 80 % soil cover to protect the soil three years post seeding?
- Which species did well?
- Which species did poorly?
- What is the location and species of any noxious or invasive weed present?
- Are there any more effective ways of doing business (e.g., erosion blankets) compared with the treatment recommendations presented with the Initial Request for EFFS - FW22 funds?

  Ten vegetation transects (each 100' long) be installed to evaluate the amount of bare ground, seeding effectiveness and the spread of noxious weeds (see also discussion below under Invasive Plants). Burn severities will be sampled along transects to help control for variation in microsites.

♦ **Noxious Weeds and Invasive Species**

The District Ranger is directed (FSM 2523.04d) to " monitor burned areas to ensure rehabilitation treatments and other measures are functioning as planned and are effective. Monitor for the post-fire presence of invasive species. Maintain treatments to keep them functioning as designed. Use monitoring results to plan follow-up actions, including the control of invasive species. " The treatment of noxious weeds will prevent permanent impairment of ecosystem structure and function in compliance with FSM 2523.02.

As awareness of the problems associated with the introduction of invasive plants species increases (see Executive Order 13112 in appendix), it becomes important to immediately evaluate the magnitude of any invasions quickly as possible and then take aggressive control action. Fire suppression activities in 2000 may have caused the introduction of some invasive species through transport by engines, dozers, and crew transport vehicles.

Monitoring should include the following items:

- Annual assessment of the magnitude of infestations, including the following information:
    - GPS map of locations and perimeters or points of infestations
    - Estimates of number of plants per square foot
    - Copies of appropriate Pesticide Use Proposals and Pesticide Use Reports for treatment of target weed species
    - Record of treatment activities (dates, treatment methods, chemicals used)
    - Evaluation of treatment success

References

U.S. Department of Agriculture. Forest Service. Uinta National Forest. 1995. Environmental Assessment for Control of Noxious Weeds and Other Undesirable Vegetation on the Uinta National Forest.

U.S. Department of Agriculture. Forest Service. Uinta National Forest. 1995. Environmental Assessment for Control of Noxious Weeds in Wilderness on the Uinta National Forest.

♦ **Archeology**

- Surveys will be conducted for any ground disturbing activities for areas that are not adequately inventoried.

♦ **Interim Evaluations**

The Implementation Team Leader will conduct periodic evaluations (annually as a minimum) with the District and Forest implementation team to assess implementation progress, effectiveness monitoring and to determine if parameters measured and sampling frequency meet the planned objectives. **The BAER team understands that monitoring funds could be available for effectiveness monitoring in years 2 and 3 provided that the Uinta National Forest submits interim reports to request additional funding and provided that the Forest documents and shares their findings.**

♦ **Reports**

- An INTERIM REPORT will be prepared.

- The overall results will be presented in a detailed report during 2004. This report will be submitted to the Forest Supervisor, other unit District Rangers, the Regional Office and all cooperating agencies and other interested parties.

♦ **Annual Financial Requirements**

The annual cost of monitoring is itemized in the following table. The total cost is $6,095 for Year 2 and $5,690 for Year 3.

(see attached financial worksheet on the following page)

Financial Worksheet	Year 2	Year 3
Soil and Hydrology		
PHOTO POINTS--Establish, ½ day in Year 2; 1.5 days to gather/download data in Years 2 and 3	$ 500	$ 375
MONITORING --3 storms per year—Gather data 4.5 days; write-up 1 day, 5.5 days in Years 2 and 3	$ 1,375	$ 1,375
MONITORING --Aerial mulching effectiveness and hydrophobic soil conditions 1 person, 1 day to gather data, 1 person, 1 day for write-up in years 2 and 3	$ 500	$ 500
MONITORING--Reconnaissance flight of the Oak Hills Fire -- 3 hours of helicopter time	$ 1,800	$ 1,800
Soil and Hydrology Subtotals	$ 4,175	$ 4,050
Erosion Control Seeding		
MONITORING--Vegetation Transects—4 days and two people to install and measure in Year 2; 3 days and two people to measure in Year 3; 2 days and one person to summarize and write report each year—(total of 10 person days for Year 2 and 8 person days for Year 3)	$ 1,400	$ 1,120
SUPPLIES--Including 20 rebar posts	$ 100	$ 100
Erosion Control Seeding Subtotals	$ 1,500	$ 1,220
Noxious Weeds		
MONITORING—Noxious Weed and Shrub Assessment—1 field day for 2 people and 1 write-up day for 1 person. (total of 3 people days for 3 years)	$ 420	$ 420
Noxious Weed Subtotals	$ 420	$ 420

(Michael D. Smith and Claire Brecher, Soil Scientists; Chad Hermandorfer & Dale Deiter, Hydrologists; David Tait, Botanist; Marlene DePietro, Range Management Specialist, and Karen Hartman, Wildlife Biologist)