

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

- ☒ 1. Funding request for estimated emergency stabilization funds
☐ 2. Accomplishment Report
☐ 3. No Treatment Recommendation

B. Type of Action

- ☒ 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)
☐ 2. Interim Report (###)
 ☐ Updating the initial funding request based on more accurate site data or design analysis
 ☐ Status of accomplishments to date
☐ 3. Final Report (following completion of work)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: **Trinity Ridge**

B. Fire Number: **ID-BOF-000628**

C. State: **Idaho**

D. County: **Elmore and Boise**

E. Region: **04 - Intermountain**

F. Forest: **02 - Boise**

G. District: **Mountain Home and Idaho City**

H. Fire Incident Job Code: **P4G6MN**

I. Date Fire Started: **August 3, 2012 (Human)** J. Date Fire Contained: **Uncontained**

K. Suppression Cost: **\$41,033,484** (estimate from I209 on 09/18/2012)

L. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): Dozer 3.4; Handline 1.7
2. Fireline seeded (miles): Dozer 3.4; Handline 1.7
3. Other (identify):

M. Watershed Number:

Table 1

Subwatershed Name	Total Acres	Acres in Fire Perimeter	% High + Mod	% in Fire Perimeter
Bear Creek	13,685	12,266	34%	89.6%
Big Five Creek-Middle Fork Boise River	13,247	8,956	24%	67.6%
Cayuse Creek-Feather River	15,554	9,873	27%	63.5%
Elk Creek	10,207	5,340	23%	52.3%
Granite Creek-Middle Fork Boise River	17,080	15,958	44%	93.4%

Subwatershed Name	Total Acres	Acres in Fire Perimeter	% High + Mod	% in Fire Perimeter
Hungarian Creek-North Fork Boise River	14,463	6,292	9%	43.5%
Lost Man Creek	12,315	12,315	69%	100.0%
Middle Fork Boise River-Browns Creek	10,589	9,950	35%	94.0%
Pete Creek-Middle Fork Boise River	10,867	878	4%	8.1%
Roaring River	20,398	17,403	36%	85.3%
Swanholm Creek-Middle Fork Boise River	21,358	13,590	20%	63.6%
Upper Sheep Creek	16,067	4,411	9%	27.5%
Upper Trinity Creek	13,177	10,609	33%	80.5%
Wagontown Creek-South Fork Boise River	11,166	5,433	15%	48.7%
Whiskey Jack Creek-Trinity Creek	12,414	12,365	41%	99.6%

N. Total Acres Burned:

NFS (144,064) Other Federal (0) State (0.1) Private (1,906)

O. Vegetation Types: Elevation throughout the fire area ranges from 3,800 to 9,451 feet at the top of Trinity Peak. Vegetation in this geographic area ranges from mixed brush and grasslands in lower elevations and dry southern slopes, mid-elevation mixed conifer forests, and high elevation subalpine forests. Primary conifer species include ponderosa pine, Douglas-fir, subalpine fir, lodgepole pine and Engelmann spruce, with small amounts of whitebark pine. Aspen also occurs throughout most forest types. Brush and grass areas primarily consist of sagebrush, bitterbrush, and a variety of grasses (Idaho fescue, bluebunch wheatgrass).

P. Dominant Soils: Lithic and Typic Cryorthents, loamy-skeletal mixed with a single grain to gravelly sandy loam surface horizon; Typic Cryumbrepts, with a coarse loamy to loamy skeletal mixed to weak fine granular gravelly sandy loam to sandy clay loam surface horizon; Typic Udorthents, loamy-skeletal non-acid, non-cal mixed frigid, with a weak medium granular gravelly loam surface layer. These occur on an array of well fractured granite bedrock of variable weathering stages.

Q. Geologic Types: Except for sedimentary deposits along stream valleys, the area affected from the fire is underlain almost entirely by the granitic rock of the Atlanta lobe of the Idaho batholith. A few small bodies of porphyritic rock cut the batholith. The granitic rock of the batholith is considered Mesozoic; the porphyritic dikes, Tertiary; and the sedimentary, Quaternary. The granitic rock of the batholith varies from quartz monzonite to granodiorite. The batholith has been disturbed by fracturing which has provided for the intrusion of porphyritic dikes and the circulation of mineral bearing solutions which provide for much of the historic mining districts mineral production.

R. Miles of Stream Channels by Order or Class:

Perennial: 416 Intermittent: 166

S. Transportation System (miles)

Roads: 125 miles Maintenance Level 3 or County Roads

175 miles Maintenance Level 2

200 miles Maintenance Level 1

Trails: 57 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 61,119 low 49,315 moderate 10,616 high (24,678 unburned)

B. Water-Repellent Soil (acres): 30,875

C. Soil Erosion Hazard Rating (acres):

Table 2

Erosion Hazard Class	Pre-fire Erosion Hazard	Post-fire Erosion Hazard
Very Low	264	243
Low	1,226	659
Moderately Low	7,024	5,283
Moderate	10,828	8,249
Moderately High	60,232	34,762
High	62,608	89,922
Very High	3,547	6,610

The soils within the burned area are characterized as primarily “moderate high” to “high” for inherent surface erosion hazard. The changed conditions (primarily a short term loss of effective ground cover and canopy interception, with a slight increase in water repellency) from wildland fire increased the acres from the “moderate” to “high” soil erosion hazard categories in the burned area by 12 percent.

D. Erosion Potential: 4.2 tons/acre (ranges from 1 to 10 tons/acre)

E. Sediment Potential: 3,319 cubic yards/square mile (range: 1,200 to 8,680)

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period (years): 3 - 5

B. Design Chance of Success (percent): 70

C. Equivalent Design Recurrence Interval (years): 3

D. Design Storm Duration (hours): 1

E. Design Storm Magnitude (inches): 1.13

F. Design Flow (cubic feet / second / square mile):

Table 3

Pre/Post Fire estimates of storm flow for the 3 Yr. Recurrence Interval (base flow not included).				
Drainage	Basin Size (miles ²)	Q _{pre} cfs	Q _{post} cfs	% Increase
Lost Man Creek (outlet)	19.3	1.7	158	9,244%
Lost Man Creek 2	7.6	3.9	122	3,055%
Trinity Creek	38.9	0.2	124	70,300%
Trinity Creek 2 @ FR#172	5.9	0.1	87.5	73,826%
Rainbow Creek	5.72	0.8	35	4,240%

- G. Estimated Reduction in Infiltration (percent): 8-11
- H. Adjusted Design Flow (cfs per square mile): refer to Table 3

PART V - SUMMARY OF ANALYSIS

Background:

The Trinity Ridge Fire was a human-caused ignition on August 3, 2012 and has burned about 146,832 acres to date was 70% contained on September 18, 2012. The fire burned in the three major watersheds of the North, Middle, and South Fork Boise Rivers between Featherville and Idaho City, Idaho. The burned area encompasses portions of the Mountain Home and Idaho City Ranger Districts on the Boise National Forest.

A. Describe Critical Values/Resources and Threats (narrative):

(edited to incorporate "Critical Values" from ID 2520-2012-1, effective February 7, 2012)

A list of values important to the Boise National Forest was provided through a delegation of authority (September 7th) and an in-briefing (September 10th). The BAER team subsequently evaluated this list of values through field assessment and associated analysis to determine the critical values (FSM 2523.1 – Exhibit 01) that may be treated within the BAER program. The risk (FSM 2523.1 – Exhibit 02) to these critical values has been assessed by the BAER team and is described below. The characterization of the threat to these critical values is based on a very similar sequence of events in adjacent watersheds following previous fires, most recently the Hot Creek Fire (2003). A list of treatment numbers has been included below each critical value description to ensure tracking between values and treatments.

1. Human Life and Safety (HLS)

- a. Very high risk to **travelers** along routes within and downstream of the watersheds of Lost Man and Buck Creeks due to an increased threat of flooding and debris flows from contiguous areas of high and moderate burn severity in source areas. The threat is especially high at the mouth of these two drainages along the FH#82 or Middle Fork Boise River Road. (*Treatments: T01, T03, T04, T05, T07, T08*)
- b. Very high risk to **travelers** along routes within and downslope from hillslopes burned at a moderate to high severity due to an increased threat of falling trees, rocks, and other debris. (*Treatments: T07, T10, T14*)
- c. Very high risk to **forest visitors and Forest Service employees** near the burned cabins of Dutch Creek due to the threat of exposure to hazardous materials such as asbestos. (*Treatments: T13*)
- d. Very high risk to **forest visitors and Forest Service employees** parked at trailheads or traveling along trails within the burned area due to the increased threat of falling trees, rocks, and other debris. (*Treatments: T09, T10*)
- e. Very high risk to **forest visitors and Forest Service employees** traveling along the Middle Fork Boise River Road near the Dutch Creek cabins due to the potential threat of injury or death from an overhanging power transmission line with burned poles. If the poles break and the line falls to a lower position, then the line would be at a level just above the road surface. (*Treatments: Hazard identified to Incident Management Team Ziegler and planned for removal on September 16, 2012.*)

- f. High risk to **forest visitors** of the Trinity Campgrounds due to the increased threat of injury or death from falling trees along informal, non-system trails, picnic spots, or fishing holes around the nearby Trinity Lakes. (*Treatments: T10, T13*)
- g. Intermediate risk to **forest visitors** due to the threat of slips, falls, caving-in, old and unstable explosives, chemical poisoning, and asphyxiation. The exposure of previously hidden abandoned and inactive mine openings within the Historic Rocky Bar Mining District present a significant threat to the health and safety of the public who may intentionally or inadvertently enter the mine workings. Two mine adits (horizontal underground opening) were identified during the field assessment. (*Treatments: T12*)
- h. Intermediate risk to the **operation of downstream reservoirs** due the threat of an increase in floatable material delivered to the reservoir from the burned area. This floatable material is expected to be transported into the reservoirs during debris flow events and may impact maintenance of reservoir surface for boater safety. (*Treatments: T11*)
- i. Low risk to the **community of Featherville**, ID due to the threat of increased flooding and debris flows.
- j. Very low risk to the **community of Pine**, ID due to the threat of increased flooding and debris flows.

2. Property (P):

- a. Very high risk to **road and bridge infrastructure** due to an increased threat of damage expected to this Forest investment because flooding, debris flows, and erosion is imminent. The burned area contains about 500 miles of roads and 13 bridges (Maintenance Level (ML) 3 = 125 mi, ML 2 = 175 mi, ML 1 = 200 mi). (*Treatments: T01, T03, T04, T05, T08*)
- b. Very high risk to **trail infrastructure** due to an increased threat of damage expected to this Forest investment because flooding, debris flows, and erosion is imminent. The burned area contains about 57 miles of trails and 7 bridges. (*Treatments: T01, T06*)
- c. High risk to the **Dutch Creek Guard Station** due to an increased threat of damage from burned trees near the remaining, unburned facilities. (*Treatments: T09, T13*)
- d. Intermediate risk to the **Snowmobile Warming Hut facilities** and site visitors due to the threat of damage from burned trees falling into the facility. Some damage to the hut has already occurred. The pit toilet was also burned in the fire, posing a risk to public health and hygiene during winter use without the sanitary facilities. (*Treatments: None that qualify, Boise NF to make decision regarding winter use.*)
- e. Low risk to the **Trinity Guard Station** due to an increased threat of damage from burned trees near the facilities (most of the immediate hazards were removed during suppression).
- f. Low risk to **public and private water supplies** due to the increased threat of damage from flooding or debris flows in the areas identified (Twin Springs, Alexander Flat, Weatherby, Hermada Mine, Dutch Creek and Trinity Guard Station, Pine, Featherville). The sources for these drinking water systems were determined to be wells.
- g. Very low risk to the **water transmission facilities** at the Dutch Creek Guard Station due to the threat of falling trees or debris that has the potential to damage or contaminate the remaining transmission facilities.
- h. Very low risk to **wellheads and hand pumps** due to the threat of damage from burned trees falling onto and damaging the Forest investment.

3. Natural Resources (NR):

- a. Very high risk to **soil productivity** due to the threat of increased soil erosion within those areas that burned at moderate to high severity. There is a high probability for mass erosion and debris flows. This fire is expected to impact soil productivity by eroding the exposed soil and nutrient rich ash off-site, as well as by increasing the spread of noxious weeds and invasive plant species. (*Treatments: T01, T02, T03, T04, T05*)
- b. Very high risk to **water quality** due to the increased threat of sediment and nutrient delivery from the burned area during precipitation events. (*Treatments: T01, T03, T04, T05, T06, T08*)
- c. Very high risk to **critical habitat that is currently occupied by bull trout** due to the increased threat from sediment delivery and debris flows. There are portions of two bull trout core areas, including six local populations, 20.6 miles of occupied habitat and 76.3 miles of designated critical habitat within the burned area. Debris flows and sediment delivery from frequent (3-year return interval) rainfall events are very likely to cause local extirpation of bull trout populations and/or functional loss of designated critical habitat and other occupied stream habitat for a period of time. (*Treatments: T01, T02, T03, T04, T05, T06, T08*)
- d. High risk to **hydrologic function** due to the increased threat of mass erosion and debris flows that scour channels below the existing root structure of riparian plants. Even though 41 percent of the fire burned at moderate to high severity, the threat to hydrologic function has been estimated to be localized within those drainages that have a substantial portion burned at moderate to high burn severity, especially within upper Trinity Creek, Lost Man Creek, and Buck Creek. (*Treatments: T01, T03, T04, T05, T06, T08*)
- e. High risk to **native plant diversity and rare plants** due to the threat from the spread of noxious weeds and invasive plant species. Known noxious weed populations (Rush Skeletonweed, Spotted Knapweed, Diffuse Knapweed, Canada Thistle, Scotch Thistle, Leafy Spurge, Butter and Eggs) exist within and immediately adjacent to the burned area. Most populations to date occur along existing road systems, decommissioned roadways, and trails. There is also invasive cheatgrass scattered throughout the Middle Fork of the Boise River in lower elevations within and adjacent to the fire. (*Treatments: T02*)

4. Cultural and Heritage Resources (CHR):

- a. Very high risk to **eligible cultural and historic sites** due to the threat of the burned area exposing previously hidden artifacts to looting. There are 70 eligible historic/cultural sites within the burned area. The Spanish Town and Lord's Cabin Cultural Sites are contributing features to the South Boise Historic Mining District (BS-414 / 10-EL-347) which is on the National Register of Historic Places as a Historic District. During the Trail Creek Fire (2000), FS archeologists observed and photographed looters on cultural resources sites during the BAER condition assessment conducted for that event. Unauthorized artifact collection (i.e. looting) is a pervasive, persistent, and well-documented activity in Idaho, especially in this area. (*Treatments: T15*)
- b. High risk to **eligible cultural and historic sites** due to the increased threat from erosion, falling trees, or falling debris causing irreversible damage to these sites. There are 70 eligible historic/cultural sites within the burned area, of which, only 21 sites have been visited as part of the BAER assessment to date. (*Treatments: To date - None proposed on NFS lands, however, further assessment may identify treatments. One site on private land is threatened by multiple hazard trees.*)

B. Emergency Treatment Objectives:

The goal of the burned area emergency rehabilitation is to:

- Reduce threats to personal injury and/or human life of visitors using select system roads or trails.
- Assess the post-fire impacts to communities and residences, public and domestic water supplies, power transmission facilities, roads, bridges, administrative and recreation facilities, and mine or CERCLA sites.
- Protect or minimize damage to National Forest System investments within the burned area. Minimize damage to key system travel routes within the fire boundary.
- Protect or mitigate potential post-fire impacts to critical natural resources and significant cultural resources within or downstream from the burned area.
- Control expected invasion of noxious weeds within and adjacent to the area where soils/vegetation was disturbed as a result of suppression activities.
- Warn users of Forest roads and trails of hazards present in the burned area. Consider temporary closure to protect public users of NF lands.

C. Probability of Completing Treatment Prior to Damaging Storm or Event:

Land 80 % Channel -- % Roads/Trails 60 % Protection/Safety 90 %

D. Probability of Treatment Success

Treatment	Years after Treatment		
	1	3	5
Land	90	70	--
See VAR; treatment design life is 3 years			
Channel	--	--	--
Roads/Trails	70	80	90
See VAR; road treatments are designed for increased runoff which will decrease as vegetation recovers.			
Protection/Safety	80	60	60
See VAR; Visitors will pay attention to the new signs.			

E. Cost of No-Action (Including Loss): See VAR;

Overall, the summary of the three map zones identified that the total treatment cost is estimated at \$5,824,374 with an expected benefit of \$6,891,391. The summary implied minimum value of protecting non-market resource critical values is justified for the treatments proposed in this BAER assessment. Map zone A has an expected benefit/cost ratio of 1.5; map zone B has an expected benefit/cost ratio of 2.5; and map zone C has an expected benefit/cost ratio of 0.5.

Several factors are not considered in the cost analysis for map zone C. First, the hillslope treatments will help reduce sediment from high and moderate severity burn areas by 92% in the Trinity drainage. This will give the downslope road and trail treatments a better chance of succeeding. Second, bull trout and their critical habitat are also downstream from the proposed treatment areas. Reducing sediment through road drainage improvements and replacing undersized culverts to pass debris and meet Forest Plan aquatic organism passage standards will help protect these already at risk populations. Third, the cost of protecting soil productivity is difficult to estimate, however, the application of mulch and seed will protect 696 acres burned

at high and moderate severity by stabilizing and providing a quicker recovery. . Finally, noxious weed treatments will protect native plant communities which were not considered by the VAR tool. The BAER Team feels that the overall package of treatments is essential to the protection of these values.

F. Cost of Selected Alternative (Including Loss): See VAR and summary statement in section E, above.

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input checked="" type="checkbox"/> Range	<input checked="" type="checkbox"/> HAZMAT/Mineral
<input checked="" type="checkbox"/> Forestry	<input checked="" type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input checked="" type="checkbox"/> Engineering	<input type="checkbox"/>
<input type="checkbox"/> Contracting	<input type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input checked="" type="checkbox"/> Archaeology	<input type="checkbox"/>
<input checked="" type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input checked="" type="checkbox"/> GIS	<input type="checkbox"/> Landscape Arch	

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Scott Brandt	Dave Woras	Holly Hampton	Doug Wilder
Chad Hood	Brett Barry	Wintauna Belt	Joe Bergstrom
Everardo Santillan	Galen Smolik	Ron Hohnstein	Joe Wheeler
Susie Osgood	Joshua Newman	Kay Beall	Jim Schmidt

H. Treatment Narrative:

(Describe the emergency treatments, where and how they will be applied, and what they are intended to do. This information helps to determine qualifying treatments for the appropriate funding authorities. For seeding treatments, include species, application rates and species selection rationale.)

These treatments were developed by each of the respective resource groups as part of a specification sheet that helped guide narrative and cost considerations. Each treatment proposal was then captured within this document. Since the development of those specification sheets, the team leader has communicated with BAER Coordinators at forest, regional, or national levels to ensure consistency with BAER authority. Therefore, this document, with the included treatment description and design, supersedes all prior versions.

Land Treatments:

T01 - Aerial Mulch & Seed

General Description: Aerially apply sterile Triticale Hybrid (*Triticum aestivum* x *Secale cereal*) seed to ground surface prior to applying straw mulch. Aerially apply agricultural straw mulch to the ground surface to achieve a continuous cover of uniform thickness in order to replace ground cover consumed by the fire. Mulch is proposed as a treatment over the sterile Triticale seed due to the timing of need for ground cover. The mulch that is to be applied this fall is to provide ground cover in the spring to reduce runoff energy due to snowmelt. Seeding alone would not be effective in the springs as seed will not germinate or be large enough to reduce overland flows. The seeding is to be effective later in the summer and fall months of 2013 as

plants mature creating roots to hold soil and stems to create mulch. The straw mulching this fall is expected to be less effective during the summer and fall months due to wind loss and decomposition in the drier summer months. Refer to BAER Treatments Catalog for more a detailed description.

Location (Suitable Sites): Refer to BAER Treatment Map. The proposed treatment units are within the Lost Man and Trinity Creeks watersheds. Treatment units have been identified using the following criteria:

1. Within areas burned at moderate and/or high severity.
2. On slopes up to 40 percent.
3. In areas that do not receive high winds.
4. In areas that have been identified for seeding.

Design/Construction Specifications:

1. Seed application rate will be 20 pounds per acre (5 – 9 PLS per square foot).
2. Straw application rate: Apply mulch to achieve a continuous cover of uniform thickness over 70% of treatment area at a depth of less than 2.0 inches. This is about 0.25 inches or 3 straw shafts deep. Application must emphasize proper dispersal of straw throughout the identified polygon to minimize clumping and achieve treatment purpose.
3. Straw and seed must conform to Idaho or State Department of Agriculture (ISDA), Certified Noxious Weed Free Standards. Straw must comply with State standard for Noxious Weed Free Forage and Straw (NWFFS). All straw provided will be grown in Idaho, have been planted, and harvested during the 2012 growing season. Straw shaft length will not exceed 12 inches. Suitable straw includes barley, rice, and wheat grasses.

Purpose of Treatment: This treatment provides benefits as listed in the BAER Treatments catalog. The BAER Team considered this treatment to be the minimum necessary to achieve a reduction in risk during the emergency period to the accumulated critical values of:

1. Soil productivity,
2. Hydrologic function,
3. Water quality,
4. Occupied critical habitat,
5. Road and trail infrastructure,
6. Travelers along routes, and
7. Native plant diversity and rare plants.

Describe Treatment Effectiveness Monitoring: Visually inspect aerial seeding to ensure approximately 5 – 9 PLS is applied per square foot. Monitor units for seed germination in the spring of 2013. Visually inspect randomly selected mulch treatment units for proper application rate and uniform thickness during/immediately after treatment. In each unit, measure percent ground cover using a 100ft-transect method once after treatment.

T02 - Early Detection & Rapid Response

General Description of Treatment: Monitor and treat noxious weed infestations on FS lands associated with suppression activities and BAER treatments. This treatment may be coordinated with private land treatments under the local County Weed Management Agreement. Refer to BAER Treatments Catalog for further description.

Suitable Sites:

1. Sites near known preexisting weed species in the area. Include trails and roads within the burned area, especially those routes designated for motorized use and trails designated for motorized or equestrian use.
2. Areas where fire suppression activities may have introduced noxious or invasive weeds.
 - a. Roads within Trinity Ridge Fire used for travel outside of existing weed populations and including fire suppression routes, handline, dozerline, helibases,

helispots, drop points, heliwater spots, spike camps, dip sites, medevac sites, camps, staging areas, ICP, and Pine Airstrip.

- b. BAER treatment sites (aerial seed & mulch sites).

Design/Construction Specifications:

1. Monitor disturbed area during growing seasons for spread.
 - a. If spread of noxious weeds is identified, then plan and design treatment.
2. Select herbicide, application rate, and application timing based on specific weed being treated, and access to the location of the infestation.
3. Consideration for TES (listed species) habitat and sensitivity when selecting appropriate herbicide.

Purpose of Treatment: This treatment provides benefits as listed in the BAER Treatments catalog. Noxious or invasive weeds are treated to stabilize and prevent unacceptable degradation to native plant community, natural, and cultural resources. Treating noxious and invasive weeds prevents the serious threat these plants have on ecosystems. The BAER Team considered this treatment to be the minimum necessary to achieve a reduction in risk to the identified critical values of:

1. Native plant diversity and rare plants.
2. Soil productivity, and
3. Occupied critical habitat.

Describe Treatment Effectiveness Monitoring: Follow-up monitoring with program funds will occur in 2nd & 3rd years as needed if new or expanded weed populations are discovered during the 1st year BAER treatments.

Channel Treatments: None recommended.

Road and Trail Treatments:

T03 - Road Drainage

General Description: This treatment will maintain the road drainage in preparation for increased runoff. Road work will be consistent with pre-fire design in most cases and will include outsloping, drain dips, waterbars, overflow structures, cross-drain culverts, debris racks, culvert cleaning, ditch cleaning, roadside stabilization, inlet guards, and template reshaping. This treatment has a high unit cost because it groups a number of individual treatments that are extrapolated across the entire burned area. Refer to the BAER Treatments Catalog for more detailed descriptions of each of the treatments listed above.

Suitable Sites: The roads are listed in the detailed specifications for engineering and on the treatment map. There are 125 mi. of Maintenance Level (ML) 3, 175 mi. of ML 2, and 200 mi. of ML 1 roads within the burned area; therefore, initial surveys were extrapolated to represent the entire length of road that may be associated with increases in hillslope runoff or streamflow.

The engineers determined that suitable road segments must meet the following criteria:

1. Located below or within areas with slopes burned at moderate to high severity,
2. Have a continuous grade and infrequent drainage structures,
3. Contain culverts that have diversion potential, and
4. Located on roads where frequencies between inspection and maintenance may be limited after the fire.

Design/Construction Specifications: This treatment will include a “system” of design/construction methods depending on the prisms current condition. The details of this treatment are provided in the engineering report and associated specifications and will be completed per Forest Service standards. This treatment is also outlined in the BAER Treatments Catalog under the following titles:

1. Outsloping
2. Drain Dips (with or without armor)

3. Waterbars
4. Overflow Structures
5. Cross-drain Installation
6. Debris Racks
7. Culvert Cleaning
8. Ditch Cleaning
9. Roadside Stabilization
10. Corrugated Inlet Guard

Generally, reshape the road surface to provide positive drainage to ditches and culverts. Remove berm where water will flow off roadbed, repair large ruts in the middle of the roadbed that channel water downgrade.

Describe Purpose of Treatment: This treatment provides benefits as listed in the BAER Treatments catalog. The BAER Team considered this treatment to be the minimum necessary to achieve a reduction in risk to the accumulated critical values of:

1. Soil productivity (within drainage bottoms)
2. Hydrologic function,
3. Water quality,
4. Occupied critical habitat,
5. Road infrastructure,
6. Operation of downstream reservoirs,
7. Travelers along routes, and

Describe Treatment Effectiveness Monitoring: See Specification referring to “Patrols for Storm Induced Road Hazards”.

T04 - Culvert Removal

General Description: Several pipe crossings were identified as being undersized due to the anticipated increase in flows from the burned watersheds above the crossings. Since vehicle access is not needed, temporary culvert removal is proposed until the area stabilizes. These culverts will be removed and have the excavated hole laid back to match the surrounding stream banks in order to pass the increased flows that are anticipated from future storm events.

Suitable Sites: See the treatment map and the engineering specifications for specific information and locations. Major roads identified during the assessment include the FS road #290B, C, D, and F; 242B. Other roads are listed in the engineering report and include roads with a maintenance level of 1, 2, or 3. All culvert removal locations were based on the determination that the existing culvert was within a watershed with substantial moderate and high burn severity and that it was undersized for the expected runoff increase.

Design/Construction Specifications: Removal of culverts shall include:

1. Setting up traffic control,
2. Excavating and removing the existing culvert off of Forest Service lands,
3. Hauling away excavated material to an approved waste site, and
4. Laying the road prism back so that it matches the slopes of the surrounding stream bank.

Purpose of Treatment: This treatment provides benefits as listed in the BAER Treatments Catalog. The BAER Team considered this treatment to be the minimum necessary to achieve a reduction in risk to the accumulated critical values of:

1. Soil productivity (within drainage bottoms)
2. Hydrologic function,
3. Water quality,
4. Occupied critical habitat,
5. Road and trail infrastructure,
6. Operation of downstream reservoirs,

7. Travelers along routes, and

Describe Treatment Effectiveness Monitoring: Monitoring shall take place after each of the summer thunderstorms for the following few years with a photo taken from the same location.

T05 - Culvert Replacements

General Description: This treatment applies to those roads that must remain open for public and administrative travel. Several pipe crossings were identified as being undersized due to the expected increase in flows from the burned watersheds above the crossings. These culverts will be replaced with larger culverts in order to pass the increased flows that are anticipated from future storm events. In areas where culvert replacement is not an effective treatment, low-water stream crossings (LWSC) will be utilized.

Suitable Sites: See Treatment map and detailed engineering specifications for a full list of culverts to be replaced by zone. Two locations will require compliance with existing Forest Plan designs that meet aquatic organism passage. All culvert replacement locations were based on the determination that the existing culvert was within a watershed with substantial moderate and high burn severity and that it was undersized for the expected runoff increase. See BAER Treatments Catalog for further description.

Design/Construction Specifications:

1. Removal of culverts shall include setting up traffic control, excavating and removing the existing culvert off of Forest Service lands, hauling away excess excavated material to an approved waste site.
 - a. Replacement of culverts shall be per the design and specifications written for each site. Contract specifications shall conform to Forest Service Supplements and the designated sections in the FP03-Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects.
 - b. Low-Water Stream Crossings shall be constructed according to direction provided in the USDA Forest Service Handbook.

Purpose of Treatment: This treatment provides benefits as listed in the BAER Treatments Catalog. The BAER Team considered this treatment to be the minimum necessary to achieve a reduction in risk to the accumulated critical values of:

1. Soil productivity (within drainage bottoms)
2. Hydrologic function,
3. Water quality,
4. Occupied critical habitat,
5. Road infrastructure,
6. Operation of downstream reservoirs,
7. Travelers along routes, and

Describe Treatment Effectiveness Monitoring: Replacement on perennial fish bearing streams complies with San Dimas criteria for Aquatic Organism Passage at Road-Stream Crossings. Replacement stream crossing will be evaluated using the San Dimas culvert inventory protocol to verify that the design was effective in providing aquatic organism passage.

T06 - Trail Drainage Rehabilitation

General Description: Many of the trails in the burned area are at risk due to the burning of stabilizing brush, roots and logs. This treatment is designed to stabilize trails lacking adequate drainage features for anticipated increases in runoff. It includes rolling dips, waterbars, and rock waterbars. The stabilization methods may vary by site but are designed to reduce trail erosion or damage.

Suitable Sites: A rapid assessment was completed during the assessment that did not provide a full evaluation of trail conditions. However, this treatment used the following criteria to determine suitable sites. Each trail segment listed for treatment would be:

1. Within or below high-burn severity areas,
2. Have a sustained grade through burned areas that lacks adequate drainage,
3. Has the potential to deliver sediment to streams,
4. Consists of previous drainage structures that were damaged by the fire, or
5. Has a stream crossing with diversion potential.

The following trails have been affected- Elk Creek 200, Hot Creek 047, Plantation 154, Rainbow 174, Roaring River 045, Sheep Mountain 124, Trail Creek 046, Trinity Creek Lower 173B, Trinity Creek Upper 173A, Upper Sheep Creek 123, William Pogue National Recreation 122, Barber Flat 049, Big Trinity Lake 180, Browns Creek 048, Cross Cut Mid-South 172B, Crosscut North End 172D, Cross Cut South 172A.

Design/Construction Specifications: According to USFS Trails Handbook 2309.18.

Installation should be designed to last no more than 3 years. Permanent structures are not part of this treatment. If safety risks cannot be mitigated for work crews then the work will be delayed until threat is reduced or stabilized.

1. Install drainage feature depending on steepness of trail (18 per mile) in areas of moderate or high severity. Focus on sections of trail that have continuous gradient for a length of greater than 50 feet and are either insloped (cupped) or show evidence of routing water (rills, gullies).
2. Hazards within or along the trail route that restrict efficient and safe access to work sites will be mitigated (rocks, trees).
3. Clean existing water bars.

Purpose of Treatment: This treatment provides benefits as listed in the BAER Treatments Catalog. The BAER Team considered this treatment to be the minimum necessary to achieve a reduction in risk to the accumulated critical values of:

1. Hydrologic function,
2. Water quality,
3. Occupied critical habitat,
4. Trail infrastructure,
5. Travelers.

Describe Treatment Effectiveness Monitoring: The sections of trail improved during this treatment will be inspected after implementation and in the spring of 2013 to ensure that drainage features are functioning.

Protection/Safety Treatments:

T07 - Road Warning Signs

General Description: This treatment will design and install highway warning signs, burned area warning signs, and road closure signs that regulate, warn, or guide traffic through the burned area. It is consistent with the language provided in the BAER Treatments Catalog. The treatment is a component of the overall travel control devices for the burned area (USDA Forest Service-EM7100-15, 2005).

Suitable Sites: An inventory of the burned traffic warning signs will need to be completed on all of the roads within the burned area to ensure the correct ordering of those signs that were damaged by the fire and need to be replaced.

The "entering burned area" signs shall be installed at all entries on higher use roads (County or ML3 roads) into the fire perimeter. Specific locations have been identified in the supporting engineering report and detailed specifications.

Per the BAER Treatments Catalog, this treatment is intended for use in one or more of the following locations:

1. Access routes to recreational areas.
2. Trailheads providing access into the burn area.
3. Informational kiosks located near the area affected by the fire.

4. Hazards along access roads that enter the fire area.
5. Roads closed with a forest order.

Detailed Design/Construction Specifications:

1. Traffic Warning and Road Closure Signs shall conform to the M.U.T.C.D. standards and shall be installed per Federal Highway Safety Standards.
2. Any pre-fire warning signs (i.e., dangerous curve ahead) shall match what was on the sign prior to the fire and shall be installed per Forest Service standards.
3. Burned Area warning signs along the major roads shall measure about 4 feet by 4 feet and consist of 0.08" aluminum, sheeted in high intensity orange with black letters. The BURNED AREA lettering must be a minimum of 5 inches in height and all remaining lettering shall be a minimum of 3.5 inches in height.

Purpose of Treatment: This treatment provides benefits as listed in the BAER Treatments Catalog. The BAER Team considered this treatment to be the minimum necessary to achieve a reduction in risk to the accumulated critical values of:

1. Travelers.

The signs along the Middle Fork Boise River Road will be posted to warn public of extreme flood danger between Buck Creek and Lost Man Creek and to advise against parking for any reason.

Describe Treatment Effectiveness Monitoring: District personnel will monitor or check signs after events to ensure that they will be effective for the future.

T08 – Storm Patrol

General Description: Storm inspection/response keeps culvert and drainage structures functional by cleaning sediment and debris from the inlet between or during storms. This work will be accomplished through equipment rental and general labor.

Suitable Sites:

Per the BAER Treatments Catalog, storm patrols are intended for use at the following locations:

1. Road crossings where loss of control of water or exceedance is identified.
2. Road access is necessary throughout the storm season.
3. Road crossings where high sediment and debris is anticipated.
4. Roads susceptible to landslides.
5. Roads with all-season surfacing (aggregate or asphalt).

The patrols will first focus on those roads that receive the most traffic and are of more value to the transportation system. In order of preference, these roads will include the following by zone:

- ZONE FEATHER: #156, #126, #135, #132,
- ZONE MIDDLE-NORTH FORK: #156, #268, #327, #129, #255,
- ZONE TRINITY: #172, #183, and #170

Other roads within the fire perimeter may be patrolled as necessary depending on the storm magnitude and location.

Design/Construction Specifications:

1. FS personnel will direct the work. The patrols are used to identify those road problems such as plugged culverts and washed out roads and to clear, clean, and/or block those roads that are or have received damage.
2. Immediately upon receiving heavy rain and Spring snowmelt the FS will send out patrols to identify road hazard conditions – obstructions such as rocks, sediment, washouts – and plugged culverts so the problems can be corrected before they worsen or jeopardize motor vehicle users.
3. The road patrols shall bring in heavy equipment necessary to mechanically remove any obstructions from the roads and culvert inlets and catch basins where necessary.
4. All excess material and debris removed from the drainage system shall be placed outside of bank-full channel where it cannot re-enter stream channels.

5. Due to the presence of several bridges in the Feather River drainage and the potential for floating debris to cause damage to those structures, the patrols will also monitor the movement of large woody debris and make a determination of whether or not the material should be removed before it contacts bridge piers or abutments.

Purpose of Treatment: This treatment provides benefits as listed in the BAER Treatments Catalog. The BAER Team considered this treatment to be the minimum necessary to achieve a reduction in risk to the accumulated critical values of:

1. Travelers,
2. Hydrologic function,
3. Road and bridge infrastructure, and
4. Occupied critical habitat.

Describe Treatment Effectiveness Monitoring: Monitor the storm-patrol response time to ensure objectives are being met. Identify the type of storm event that mobilizes material.

T09 - Recreation Site Hazard Removal

General Description: Remove fire damaged trees that threaten recreation facilities or parking areas that support administrative or recreational uses.

Description of Suitable Sites: Burned areas around Big Trinity Lake Campgrounds, Little Trinity Lake Picnic area, and trailheads serving system trails.

Design/Construction Specifications:

1. Identify and mark all hazard trees prior to work using qualified inspectors.
2. Fall qualified hazard trees which have the potential of striking any recreation improvement, trailhead sign, or cause injury to visitors/employees in stationary positions such as parking or campground sites.

Purpose of Treatment: This treatment provides benefits as listed in the BAER Treatments Catalog. The BAER Team considered this treatment to be the minimum necessary to achieve a reduction in risk to the accumulated critical values of:

1. Trail infrastructure,
2. Dutch Creek Guard Station,
3. Trinity Guard Station,
4. Wellheads and hand pumps, and
5. Forest visitors and Forest Service employees.

Describe Treatment Effectiveness Monitoring: Inspection prior to opening the recreation areas and monthly during the use season for the first year after implementation to ensure risk to infrastructure and public safety has been resolved.

T10 - Recreation Site Safety Signage

General Description: This treatment will design and install burned area warning signs, and warn forest visitors recreating within the burned area. It is consistent with the language provided in the BAER Treatments Catalog. The treatment is a component of the overall travel control devices for the burned area (USDA Forest Service-EM7100-15, 2005). The warning signs will identify the types of hazards to watch for at the recreation site. This treatment will place hazard warning signs and information signs at 18 developed recreation areas including trailheads and campgrounds.

Suitable Sites: This treatment is intended for use in one or more of the following locations:

1. Access routes to recreational areas.
2. Trailheads providing access into the burn area.
3. Informational kiosks located near the area affected by the fire.

All of the recreation sites that access or are within the burned area have been identified on the treatment map

Design/Construction Specifications: The travel management strategy identifies the type of signing necessary. Use may be discouraged at certain times of the year when the risk is higher. This treatment must be combined with the closure order to ensure that it is posted consistent with both the identified hazards as well as the language of the order. The sign will be integral to the enforcement of a legal order identified in the Temporary Trail Closure Treatment and citing the appropriate CFR. Purchase and install signs at each of the identified locations consistent with Forest Recreation Standards at these locations.

Purpose of Treatment: This treatment provides benefits as listed in the BAER Treatments Catalog. The BAER Team considered this treatment to be the minimum necessary to achieve a reduction in risk to the accumulated critical values of:

1. Travelers, and
2. Forest visitors and Forest Service employees.

Describe Treatment Effectiveness Monitoring: A Forest Service employee will inspect the signs.

T11 - Reservoir Hazard Road Warning Signs

General Description: Install hazard warning signs at entry points to Arrowrock Reservoir, which is the only downstream reservoir likely to have an increase in floatable debris that would be a hazard to recreation users on the reservoir. The signs will consist of a warning to the public to be aware of the possibility for increased floatable debris in the reservoir due to the fire.

General Description of Suitable Sites: Burned Area Signs - These signs shall be installed at entry points for recreational users to Arrowrock Reservoir. Since at low reservoir levels boaters use numerous undeveloped launch sites, the signs would be located at 3 points along access roads to the reservoir. Sign locations include:

Sign Locations:

1. On FH82 near Arrowrock Dam for traffic coming up the Boise River.
2. On FH82 upstream of Arrowrock Reservoir at full pool level, below Willow Creek Campground for traffic coming down the Boise River.
3. On FR 377 (Cottonwood Creek) at its confluence with FH 82 adjacent to the reservoir for traffic coming down Cottonwood Creek.

Design/Construction Specifications:

This treatment must be coordinated with the Bureau of Reclamation and the Idaho Parks and Recreation prior to expending funds.

Reservoir Hazard warning signs shall measure, at a minimum, 4 feet by 4 feet and consist of 0.08" aluminum, sheeted in high intensity orange with black letters. The lettering shall be a minimum of 3.5 inches in height.

CAUTION BOATERS
INCREASED DEBRIS
FROM UPSTREAM FIRES

Purpose of Treatment: The BAER Team considered this treatment to be the minimum necessary to achieve a reduction in risk to the identified critical values of:

1. Operation of downstream reservoirs.

Describe Treatment Effectiveness Monitoring: District personnel while working in the areas of these signs shall monitor their effectiveness by observing if they are still installed for the 3-5 year period they are anticipated to be needed.

T12 - Abandoned Mine Closure

General Description: The treatment would close the mine opening to prevent public from entering while providing for bat ingress/egress.

Location (Suitable) Sites: Blake Gulch and Wide West Gulch in the Feather River Zone.

Design/Construction Specifications: A Qualified Mine Safety Lead has visited the sites and recommends the following prescription: The closure prescription would consist of installing a 12' long 18" diameter culvert in the opening (bat ingress/egress). Utilize expanding foam to anchor the culvert in place and cover foam with rock and soils for protection from UV and vandalism. Spaced angle iron would be welded to the opening of the culvert to allow for bat ingress/egress.

Purpose of Treatment: This treatment is not considered to be standard. The BAER Team considered this treatment to be the minimum necessary to achieve a reduction in risk to the identified critical values of:

1. Forest visitors.

T13 – Public Safety Exclosure

Provide a Brief General Description of Treatment: Dutch Creek Guard Station Rental and admin site burned in the fire and exposed hazardous conditions such as asbestos dust, unsupported chimneys, and deep basements. This treatment would install a fence to restrict public access and reduce risk of exposure. Removal of fire damaged building and hazardous materials from the site would be accomplished through other program funds.

The Trinity Area Campgrounds are mostly intact with pockets of burned vegetation. These campgrounds will remain open, due to only a few identified hazards. However, the area around the nearby lakes was burned too and may put visitors (fishing, picnicking, and viewing) in danger of falling trees. This treatment would construct short sections of buck and rail fence with a closure sign identifying the hazards along the non-system trails around the lakes.

Suitable Sites: See treatment map

1. Dutch Creek Administrative and Recreational Facilities.
2. Access points from Trinity Area Campgrounds to nearby lakes.

Design/Construction Specifications: See detailed specifications within recreation reports.

1. Construct 525 Ft of Chain Link Fence with Locking Gates at Dutch Creek.
2. Construct 200 Ft of Buck and Rail Fence at Trinity Area.
3. Each closure fence would be posted with signage identifying the extent of the closure, timeframe, and reasons.
4. Consultation with SHPO will be necessary when mitigating historic and cultural resources at these sites.

Purpose of Treatment: This treatment provides benefits as listed in the BAER Treatments Catalog. The BAER Team considered this treatment to be the minimum necessary to achieve a reduction in risk to the accumulated critical values of:

1. Forest visitors and Forest Service employees,
2. Forest visitors,
3. Eligible cultural and historic sites.

Describe Treatment Effectiveness Monitoring: Monitor whether the closures are effectively keeping people aware from identified hazardous conditions through routine observations while traveling through the area.

T14 - Temporary Trail Closure

General Description: Temporary closure will be considered to the designated trail systems impacted from Trinity Ridge fire. There were 57 miles of trail impacted from the fire, 14 were motorized and 2 were non-motorized routes. The designated routes have not been fully assessed for post-fire conditions related to the safe and sustainable use of the route.

Suitable Sites: The following trails are within the fire area are considered to support high public use: Elk Creek 200, Hot Creek 047, Plantation 154, Rainbow 174, Roaring River 045, Sheep Mountain 124, Trail Creek 046, Trinity Creek Lower 173B, Trinity Creek Upper 173A, Upper Sheep Creek 123, William Pogue National Recreation 122, Barber Flat 049, Big Trinity Lake

180, Browns Creek 048, Cross Cut Mid-South 172B, Crosscut North End 172D, Cross Cut South 172A, Grand Mountain 061.

Design/Construction Specifications: Develop closure order at the forest level that describes full closure of trails within the burned area. This order should provide specific routes, a map, and the expected timeframe for the closure.

Purpose of Treatment: The BAER Team considered this treatment to be the minimum necessary to achieve a reduction in risk to the accumulated critical values of:

1. Travelers along routes,
2. Trail infrastructure, and
3. Forest visitors and Forest Service employees.

Describe Treatment Effectiveness Monitoring: Inspection prior to opening the trail route and during the use season for the first year after implementation to ensure risk to public safety has been resolved.

T15 – Temporary Area Closure & Patrol – Classified/Sensitive

General Description: This treatment will implement a temporary area closure with associated on-site signage and increased patrols for enforcement. Details provided upon request.

Location/(Suitable) Sites:

Design/Construction Specifications: Prepare closure order, sign the closure area and closed trails, and conduct enforcement patrols.

Purpose of Treatment Specifications:

Treatment Effectiveness Monitoring Proposed:

I. Monitoring Narrative:

(Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.)

Part VI – Emergency Stabilization Treatments and Source of Funds

Interim # _____

			NFS Lands			Other Lands			All	
		Unit	# of		Other	# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	BAER \$	\$	units	\$	Units	\$	\$
A. Land Treatments										
T01-Aerial Mulch & Seed	acre	1,671	1880	\$3,140,540	\$0		\$0		\$0	\$3,140,540
T02-Early Detection & Rapid	acre	14	5155	\$72,067	\$0		\$0		\$0	\$72,067
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Land Treatments				\$3,212,607	\$0		\$0		\$0	\$3,212,607
B. Channel Treatments										
				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Channel Treatments				\$0	\$0		\$0		\$0	\$0
C. Road and Trails										
T03-Road Drainage	miles	4,873	269	\$1,311,359	\$0		\$0		\$0	\$1,311,359
T04-Culvert Removal	site	1,914	25	\$47,840	\$0		\$0		\$0	\$47,840
T05-Culvert Replacements	site	18,697	47	\$878,770	\$0		\$0		\$0	\$878,770
T06-Trail Drainage Rehabil	site	117	322	\$37,761	\$0		\$0		\$0	\$37,761
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Road and Trails				\$2,275,730	\$0		\$0		\$0	\$2,275,730
D. Protection/Safety										
T07-Road Warning Signs	each	523	51	\$26,664	\$0		\$0		\$0	\$26,664
T08-Storm Patrol	day	3,250	15	\$48,744	\$0		\$0		\$0	\$48,744
T09-Recreation Site Hazard	each	198	18	\$3,571	\$0		\$0		\$0	\$3,571
T10-Recreation Site Safety	site	479	18	\$8,615	\$0		\$0		\$0	\$8,615
T11-Reservoir Hazard Notice	each	680	3	\$2,040	\$0		\$0		\$0	\$2,040
T12-Mine Closure	each	2,610	2	\$5,220	\$0	0	\$0		\$0	\$5,220
T13-Public Safety Exclosure	feet	18	1040	\$18,803	\$0		\$0		\$0	\$18,803
T14-Temporary Trail Closure	each	3,007	1	\$3,007	\$0		\$0		\$0	\$3,007
T15-Temporary Area Closure	acre	23	360	\$8,100	\$0		\$0		\$0	\$8,100
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Protection/Safety				\$124,764	\$0		\$0		\$0	\$124,764
E. BAER Evaluation										
Initial Assessment	Report	\$140,000	1	---	\$0		\$0		\$0	\$0
Insert new items above this line!				---	\$0		\$0		\$0	\$0
Subtotal Evaluation				---	\$0		\$0		\$0	\$0
F. Monitoring										
				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Monitoring				\$0	\$0		\$0		\$0	\$0
G. Totals				\$5,613,101	\$0		\$0		\$0	\$5,613,101
Previously approved										
Total for this request				\$5,613,101						

PART VII - APPROVALS

1. /s/ Cecilia R. Seescholtz
CECILIA R. SEESHOLTZ
Forest Supervisor (signature)

9/28/2012

Date

2. /s/Harv Forsgren
Regional Forester (signature)

10/2/2012

Date