2008 Angora Wildfire Hydrophobicity Field Monitoring Report
Lake Tahoe Basin Management Unit,
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I. Introduction

Purpose

Among the effects of wildfire in the ecosystem is an increase in water repellency of the soil. As the organic material is combusted, the resulting vapors infiltrate the soil where it cools and condenses onto the soil particles. This produces a water repellant layer, usually within approximately 2 inches of the surface. Although this hydrophobic layer is generally parallel to the surface, it is highly variable and thus is not continuous throughout the burned area. The fire-induced hydrophobic nature of the soil reduces infiltration and increases surface runoff from precipitation events, and thus increases the risk of erosion. (Robichaud, Lewis, and Ashmun, 2007).

This project will monitor the recovery of soils that have been become hydrophobic due to the effects of the Angora Wildfire. The initial hydrophobicity measurements were taken in August 2007, approximately one month after the fire was contained. The area will again be sampled when the snow melts in spring 2008, and repeated annually until the hydrophobicity returns to levels comparable to those found on adjacent unburned lands.

Background

On the afternoon of June 24, 2007 the Angora Wildfire began on the Lake Tahoe Basin Management Unit in the South Lake Tahoe, CA area, just west of North Upper Truckee Road near the community of Meyers. The fire was started by an illegal, unattended campfire in the area of Seneca Pond. Southerly winds and extreme fire conditions enabled the fire to quickly spread northward where it burned an area of approximately 3,100 acres before being contained. Of the 3,100 acres that burned, 2,736 acres were lands managed by the US Forest Service. On the private lands adjacent to the USFS lands, over 250 residences were burned. The soil burn severity ranged from low to high, with 24% of the area experiencing low severity burn, 42% moderate severity, and 34% high severity (Weaver, Biddinger and Rust, 2007).

Watershed Description

Most of the severely burned slopes have a southeast facing aspect. The burned area is considered to be in the rain shadow of the eastern Sierra. The burned area contains 5 miles of perennial streams and 22 miles of ephemeral streams. The majority of the burn area (2,500 acres) drains into the Upper Truckee River. There are about 630 acres on the north side of Tahoe Mountain that drain into the Tahoe Keys, and approximately 24 acres

drain into the Taylor Creek watershed which contains Fallen Leaf Lake (Weaver, Biddinger and Rust, 2007).

Vegetation in the burned area consists primarily of mixed conifer with Jeffrey pine, white fir, and a scattered distribution of sugar pine, and incense-cedar. Understory vegetation consists primarily of green leaf manzanita, and Ceanothus species. Riparian vegetation along perennial streams consists of alders, aspen, sedges and other forbs (Weaver, Biddinger and Rust, 2007).

The bedrock geology in the burned area is predominantly composed of glacial deposits, granitic core rocks, metamorphic roof pendents, and colluvial deposits. Angora Ridge is composed of Pleistocene aged Tahoe glacial till. The lower gradient areas of Angora Creek and the lower slopes of Angora Ridge are filled with Quaternary aged colluvial deposits, which are composed mostly of unconsolidated sands and gravels derived from granitic rock. Soils in the burn area are mostly sandy and moderately deep, developed on glacial till parent materials (Weaver, Biddinger and Rust, 2007).

The elevation range within the burn area is from 6,300 feet at SH 89 on the north end of the fire to 7,290 feet at the Lookout at Angora Ridge on the west perimeter. The Angora Ridge and Tahoe Mountain areas of the burn are moderately-high relief topography while the residential areas on the west and northwest side of the fire are relatively flat lying. Approximately 70% of the burned area had slopes less than 30%, and approximately 29% of the burned area had 30 – 60% slopes. The remaining 1% has slopes greater than 60% (Weaver, Biddinger and Rust, 2007).

The summers are generally dry with occasional thunderstorms that may be locally intense, however, the annual 25 to 30 inches of precipitation occurs primarily as snow in the winter. Occasional rain-on-snow events occur in which a cold winter snow is followed by a warmer rain (Weaver, Biddinger and Rust, 2007).

II. Methodology

The method used to measure hydrophobicity in this study, the Mini Disk Infiltrometer (MDI) method, reduces the inherent subjectivity in the more traditional water drop penetration time test hydrophobicity measurement. The MDI consists of a cylinder with a porous disk on the bottom. The cylinder is divided into two chambers, the main chamber and the bubble chamber. When the porous disk end of the cylinder is placed on soil, suction is created across the disk that, in non-hydrophobic soil, breaks the surface tension of the water and draws water from the cylinder into the ground. The amount of suction is adjusted by a control tube in the top of the infiltrometer. The rate at which the water flows through the disk (milliliters per minute) indicates the degree of soil hydrophobicity. Highly hydrophobic soils will have no flow and non-hydrophobic soils will have rapid flow from the infiltrometer into the soil.

Initially five different sites were selected for monitoring in the project area. The sites were selected based on characteristics that have been correlated to hydrophobicity in

soils. These characteristics are 1) burn severity, 2) aspect (north or south facing), and 3) position on the slope (upper or lower). Water repellency of soil is typically highly correlated to the burn severity (Robichaud, Lewis, and Ashmun, 2007), and burn severity is correlated to the slope aspect and whether it is higher or lower on the slope (Robichaud, Lewis, and Ashmun, 2007). Hill slopes with a northern aspect tend to be wetter and more densely vegetated, which affects fire spread rate and fire residence time, and thus the soil burn severity. Likewise, the position on the slope, higher or lower, may also affect the burn severity. By sampling areas that have various combinations of these characteristics, (burn severity, aspect and position on the slope), we can extrapolate the results of these tests to other areas with like characteristics without having to measure all hill slopes in a burn area. As part of a science class at Lake Tahoe High School, measurements were taken on a steep, high severity burned hillslope immediately adjacent to the school. The results at this 6th site were incorporated into this study, although the site characteristics were the same as one of the other existing sites.

Due to the high degree of spatial variability of water repellency of burned soils, several transects are recommended for each site type to be characterized (i.e. a particular hill slope). The confidence levels of these measurements is determined by the number of samples collected and analyzed, The number of samples required for various confidence levels are estimated in Robichaud, Lewis, and Ashmun, (2007). For a confidence level of 90% (with a precision of ± 1 ml/min), the estimated required number of samples is 60 (6 transects), and for a confidence level of 95% the estimated required number of samples is 80 (8 transects) (Table B1, Robichaud, Lewis, and Ashmun, 2007).

Six to eight transects at each site were sampled in the following manner. A 330 foot transect contained five sample locations at 0 feet, 33 feet, 100 feet, 200 feet, and 330 feet from the start of the transect. At each of these five sample locations the ash is cleared from the soil and two depths are sampled. This is done by removing the upper ½ inch of soil from a small area (approximately 6 inches by 6 inches), and beside this is another area of similar size that has the upper 1 ¼ inch of soil removed. Three MDI measurements are performed on each of these cleared areas by placing the porous bottom of the MDI flat on the ground and recording the volume of water that flows in 1 minute. The three results from each depth are averaged to produce a single value for that depth and sample location.

This study included the following sites, illustrated on Figure 1:

- Angora Ridge Upper: high intensity burn – SE aspect – upper slope (H-SE-U)
- Angora Ridge Lower: high intensity burn – SE aspect – lower slope (H-SE-L)
- Boulder Mtn. Lower: moderate intensity burn – SE aspect – lower slope (M-SE-L)
- Tahoe Mtn. Upper: moderate intensity burn – NE aspect – upper slope (M-NE-U).
- Tahoe Mtn. Lower: high intensity burn – NE aspect – lower slope (H-NE-L)
- High School Site: high intensity burn - NE aspect- lower slope (H-NE-L)

Eight transects, representing a 95% confidence level, were performed for three high burn severity sites, and 6 transects, representing a 90% confidence level, were performed for

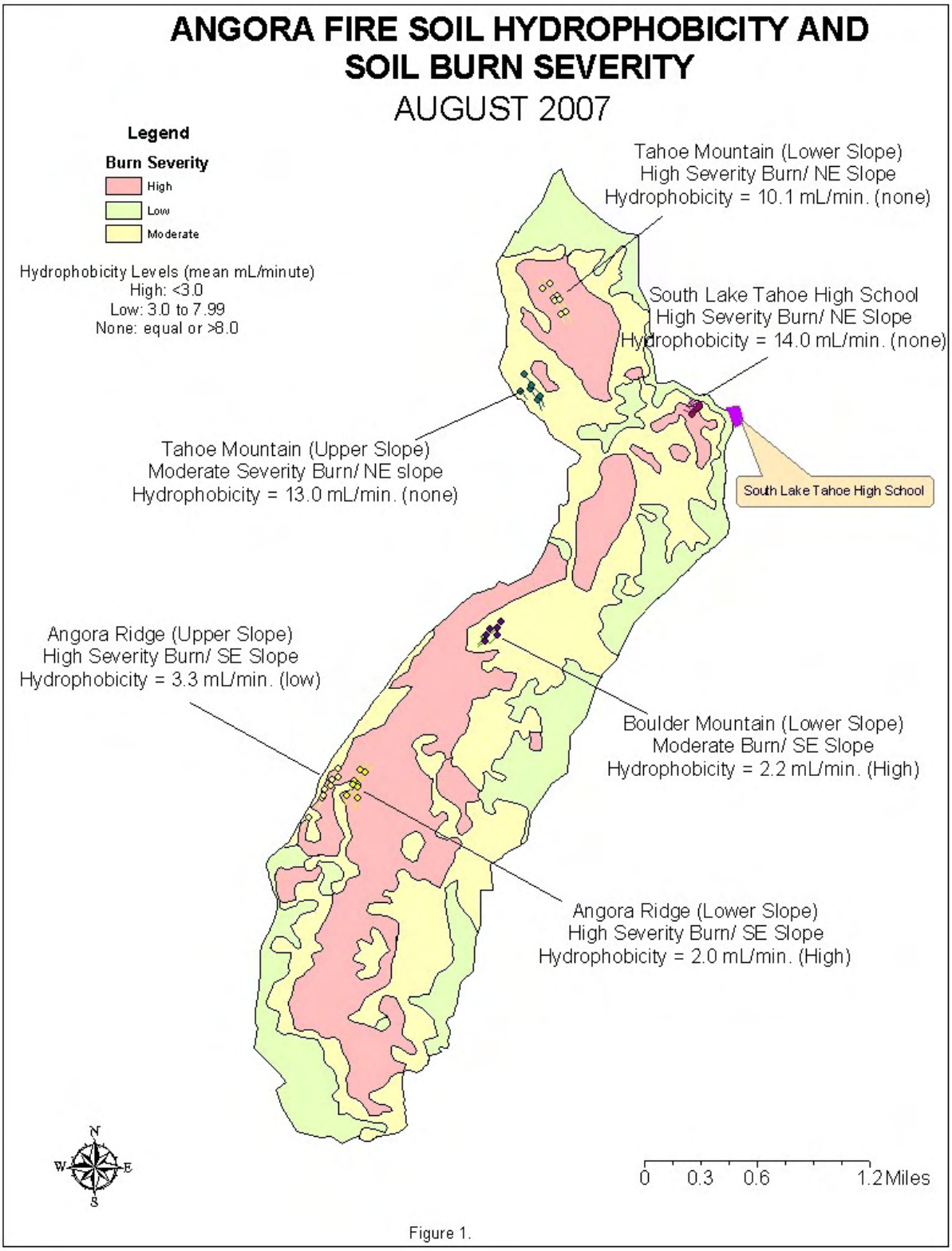

Figure 1 (modified from Weaver, Biddinger and Rust, 2007)

the 2 moderate burn severity sites and the High School site. The total number of transects was 42.

III. Results

Various classification schemes exist to rate the degree of water repellency. The classification method used in this report follows the example from (Robichaud, Lewis, and Ashmun, 2007), in which the degree of water repellency is categorized as high, low, or none. The volumes of water flowing from the MDI during 1 minute that correlates to each of these categories are <3ml/min (high), ≥3 to < 8 (low), and ≥8 (none).

The raw data are presented in Appendix A and summarized here in Table 1. Each transect contains 5 MDI values at each depth for a total of 10 MDI values per transect. The MDI value at each sample location determines the degree of soil water repellency (high, low, or none) at that sample location and depth. For each site type (H-SE-U, etc.), the proportion of high, low, none values for water repellency is calculated and these percentages are used to describe the overall degree and extent of soil water repellency on the assessed hill slope.

Table 1: Angora Fire Hydrophobicity Results Summary

				Percentage of samples with:				
Site Name	Burn Severity	Aspect	Slope Location	High Water Repellency (%)	Low Water Repellency (%)	No Water Repellency (%)	Class Mean (ml/ min)[1]	Hydro-phobicity Rating
Angora Ridge - upper	high	SE	upper	80	9	11	3.3	Low
Angora Ridge - lower	high	SE	lower	85	9	6	2	High
Boulder Mountain	moderate	SE	lower	80	12	8	2.2	High
Tahoe Mountain - upper	moderate	NE	upper	15	25	60	13	None
Tahoe Mountain - lower	high	NE	lower	33	25	43	10.1	None
High School	high	NE	lower	3	15	82	14	None

[1] Class Mean Rating: No hydrophobicity (≥ 8 ml/min)
Low hydrophobicity (3 to < 8 ml/min)
High hydrophobicity (< 3 ml/min)

Following this classification, the three slopes with NE aspects which include Tahoe Mtn Upper and Lower, and the High School site exhibited no water repellency (10.1 ml/min, 13 ml/min, and 14ml/min respectively). The Angora Ridge Upper site (SE aspect, and high burn severity) fell just into the low category (3.3 ml/min), and the southeast facing high intensity burn Angora Ridge Upper and moderate intensity Boulder Mountain Lower sites both exhibited high water repellency (2.0 ml/min and 2.2 ml/min respectively).

IV. Discussion

Surprisingly, the characteristic that most closely correlated to the soil hydrophobicity in the Angora Fire is the slope aspect and not the burn severity or slope elevation. The soils on all three northeast facing slopes (Tahoe Mountain and High School sites) have minimal or no water repellency, while the soils on all three southeast facing slopes (Angora Ridge and Boulder Mountain sites) have relatively high water repellency, regardless of differences in burn severity or slope elevation (1).

One possible explanation of the correlation of hydrophobicity and aspect is that the soil organic material contained more moisture and thus didn't burn as intensely. Although two of the NE facing slopes was rated as high intensity burn, and the fast moving fire consumed considerable surface vegetation, this apparently did not affect the organic matter just beneath the surface.

When applying the results of these measurements over the entire burn area, it is estimated that 1,819 acres of high to moderately burned slopes in the Angora Burn located on south east facing slopes, exhibit relatively high to low hydrophobicity. It is also estimated that 530 acres of the high to moderately burned slopes in the Angora Burn located on north east facing slopes, exhibit no hydrophobicity (the remaining 751 acres of low severity burn are also assumed to exhibit no hydrophobicity).

Approximately 20% of the hydrophobic area of the burn (or 475 acres) is located on lands rated as high erosion hazard. These areas are illustrated on Figure 2. Monitoring for the 2008 season will focus on re-sampling the 3 sites located on the southeast facing slopes. In addition visual monitoring within the high erosion hazards area will be performed to determine whether erosion features are developing (including use of low elevation aerial photography). Additional hydrophobicity monitoring sites may be established if substantial recovery is not observed. In addition, hydrophobicity will be measured on an adjacent unburned southeast facing slope.

(1) One of these southeast facing sites, Angora Ridge Upper, had a value that was just slightly out of the "high" range. The mean hydrophobicity was 3.3 ml/min, just .3 mil/min over the breakpoint between a high and low rating (3.0 ml/min).

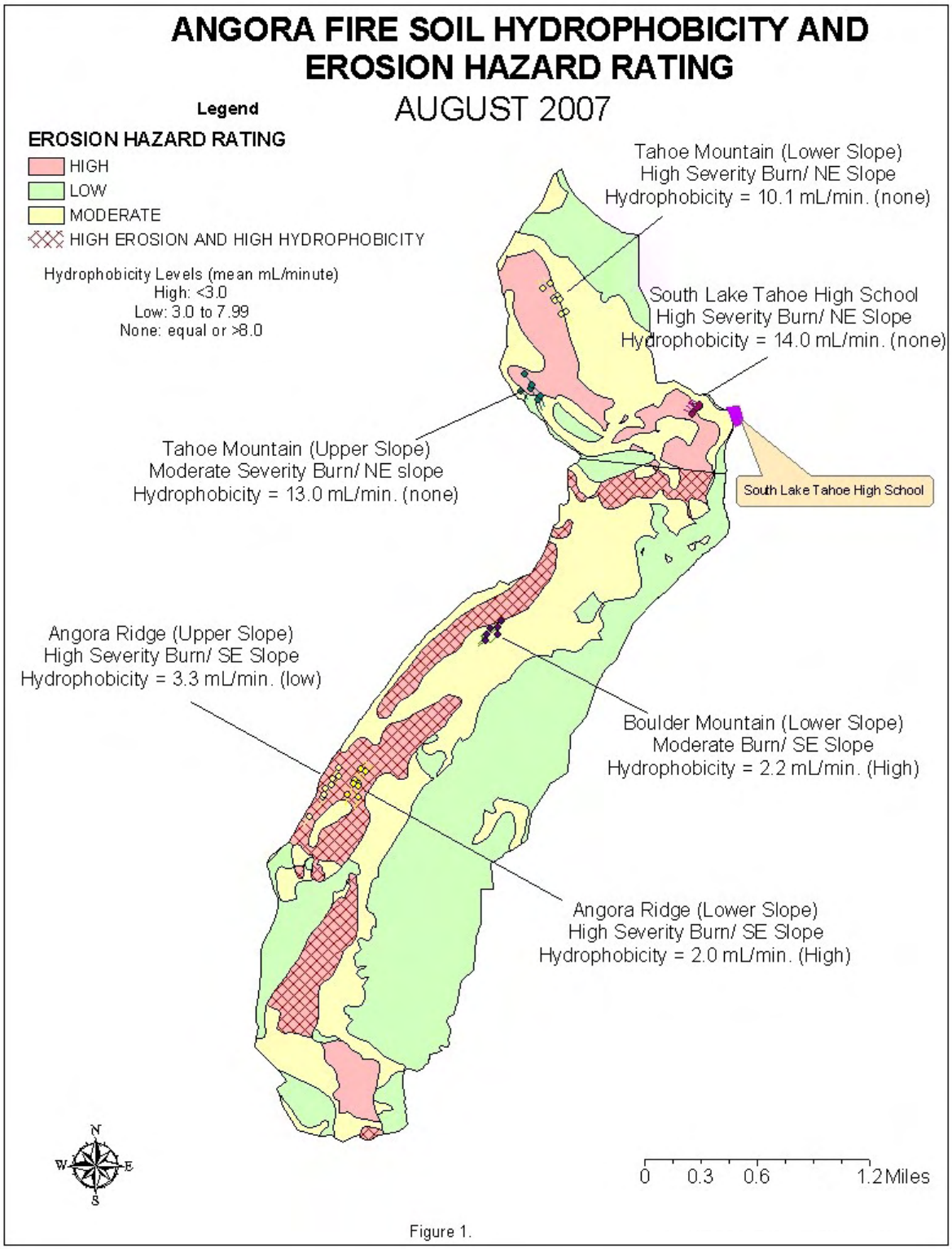

Figure 2 (modified from Weaver, Biddinger and Rust, 2007)

In the interest of full disclosure, it must be said that the sampling of the High School site was done almost completely by the high school students. Although they were supervised, and, to the extent possible, their work was monitored to ensure it was done correctly, the procedures were carried out by many different students which may affect the consistency of the procedures and results. That being said, LTBMU monitoring staff responsible for supervising the students, feels they were performing the tasks properly. Additionally, one of the benefits of the MDI method is that it reduces the inherent variability performing the procedures, even when done by different people.

References:

Robichaud, Peter R.; Lewis, Sarah A., and Ashmun, Louise E. April, 2007. *Using a Mini Disk Infiltrometer to Determine Soil Water Repellency*. Draft. Rocky Mountain Research Station - Watershed and Aquatic Program Area, Forestry Sciences Laboratory, Moscow, ID.

Rick Weaver and Tim Biddinger, BAER Hydrologists, Tahoe National Forest, Nevada City, CA; Brad Rust, BAER Soil Sceintist, Shasta-Trinity National Forest, Redding, CA; July 2007; *Hydrology and Soil Resource Assessment; Angora Fire Burned Area Assessment*. BAER Report on 2007 Angora Fire, Lake Tahoe Basin Management Unit, CA.

Appendix A:
Angora Wildfire Hydrophobicity Data

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Angora Ridge Upper												
T01-0	H	SE	U	1	2	13	85	33.3			X	HIGH
T01-0	H	SE	U	3	73	44	37	51.3			X	HIGH
T01-10	H	SE	U	1	0	0	0	0.0	X			HIGH
T01-10	H	SE	U	3	0	1	1	0.7	X			HIGH
T01-30	H	SE	U	1	0	0	1	0.3	X			HIGH
T01-30	H	SE	U	3	0	0	20	6.7		X		HIGH
T01-60	H	SE	U	1	0	0	0	0.0	X			HIGH
T01-60	H	SE	U	3	3	17	3	7.7		X		HIGH
T01-100	H	SE	U	1	0	2	0	0.7	X			HIGH
T01-100	H	SE	U	3	0	0	0	0.0	X			HIGH
T02-0	H	SE	U	1	0	0	1	0.3	X			HIGH
T02-0	H	SE	U	3	1	1	0	0.7	X			HIGH
T02-10	H	SE	U	1	0	0	0	0.0	X			HIGH
T02-10	H	SE	U	3	0	0	0	0.0	X			HIGH
T02-30	H	SE	U	1	0	0	0	0.0	X			HIGH
T02-30	H	SE	U	3	0.5	0.5	0	0.3	X			HIGH
T02-60	H	SE	U	1	0	7	0	2.3	X			HIGH
T02-60	H	SE	U	3	1	1	0	0.7	X			HIGH
T02-100	H	SE	U	1	0	0	0	0.0	X			HIGH
T02-100	H	SE	U	3	0	1	0	0.3	X			HIGH

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Angora Ridge Upper (cont.)												
T03-0	H	SE	U	1	0	1	0	0.3	X			HIGH
T03-0	H	SE	U	3	0	1	0	0.3	X			HIGH
T03-10	H	SE	U	1	7	32.5	13	17.5			X	HIGH
T03-10	H	SE	U	3	1	2	0	1.0	X			HIGH
T03-30	H	SE	U	1	0	0	0	0.0	X			HIGH
T03-30	H	SE	U	3	0	0	0	0.0	X			HIGH
T03-60	H	SE	U	1	6	10	9	8.3			X	HIGH
T03-60	H	SE	U	3	15	39	18	24.0			X	HIGH
T03-100	H	SE	U	1	23	6	11	13.3			X	HIGH
T03-100	H	SE	U	3	33	3	12	16.0			X	HIGH
T04-0	H	SE	U	1	0	0	0	0.0	X			HIGH
T04-0	H	SE	U	3	0	0	0	0.0	X			HIGH
T04-10	H	SE	U	1	0.5	0.5	6	2.3	X			HIGH
T04-10	H	SE	U	3	0	0	0	0.0	X			HIGH
T04-30	H	SE	U	1	2	1	0.5	1.2	X			HIGH
T04-30	H	SE	U	3	1	0	0.5	0.5	X			HIGH
T04-60	H	SE	U	1	1	22	0	7.7		X		HIGH
T04-60	H	SE	U	3	0	0	0	0.0	X			HIGH
T04-100	H	SE	U	1	17	21	39	25.7			X	HIGH
T04-100	H	SE	U	3	0	0	0	0.0	X			HIGH

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Angora Ridge Upper (cont.)												
T05-0	H	SE	U	1	0	0	0	0.0	X			HIGH
T05-0	H	SE	U	3	0	0	0	0.0	X			HIGH
T05-10	H	SE	U	1	0	0	0	0.0	X			HIGH
T05-10	H	SE	U	3	0	0	0	0.0	X			HIGH
T05-30	H	SE	U	1	0	0	0	0.0	X			HIGH
T05-30	H	SE	U	3	0	6	0	2.0	X			HIGH
T05-60	H	SE	U	1	0	0	0	0.0	X			HIGH
T05-60	H	SE	U	3	0	0	0	0.0	X			HIGH
T05-100	H	SE	U	1	0	0	2	0.7	X			HIGH
T05-100	H	SE	U	3	5	2	8	5.0		X		HIGH
T06-0	H	SE	U	1	0	3	0	1.0	X			HIGH
T06-0	H	SE	U	3	0	0	0	0.0	X			HIGH
T06-10	H	SE	U	1	0	0	1	0.3	X			HIGH
T06-10	H	SE	U	3	4	4	1	3.0		X		HIGH
T06-30	H	SE	U	1	1	0	0	0.3	X			HIGH
T06-30	H	SE	U	3	4	2	5	3.7		X		HIGH
T06-60	H	SE	U	1	0.5	0	0	0.2	X			HIGH
T06-60	H	SE	U	3	0	0	0	0.0	X			HIGH
T06-100	H	SE	U	1	0	0	1	0.3	X			HIGH
T06-100	H	SE	U	3	0	0	1	0.3	X			HIGH

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Angora Ridge Upper (cont.)												
T07-0	H	SE	U	1	1	2	1	1.3	X			HIGH
T07-0	H	SE	U	3	0	0.5	0	0.2	X			HIGH
T07-10	H	SE	U	1	0	1	0	0.3	X			HIGH
T07-10	H	SE	U	3	1	3	0	1.3	X			HIGH
T07-30	H	SE	U	1	0	0	5	1.7	X			HIGH
T07-30	H	SE	U	3	0	0	0	0.0	X			HIGH
T07-60	H	SE	U	1	0	0	0	0.0	X			HIGH
T07-60	H	SE	U	3	0	0	0	0.0	X			HIGH
T07-100	H	SE	U	1	0	0	0	0.0	X			HIGH
T07-100	H	SE	U	3	0.5	0	0	0.2	X			HIGH
T08-0	H	SE	U	1	0	0	0	0.0	X			HIGH
T08-0	H	SE	U	3	0	0.5	0	0.2	X			HIGH
T08-10	H	SE	U	1	0.5	0	0	0.2	X			HIGH
T08-10	H	SE	U	3	1	0	0	0.3	X			HIGH
T08-30	H	SE	U	1	0	0	0	0.0	X			HIGH
T08-30	H	SE	U	3	0	0	0	0.0	X			HIGH
T08-60	H	SE	U	1	12	1	0	4.3		X		HIGH
T08-60	H	SE	U	3	0	2	30	10.7			X	HIGH
T08-100	H	SE	U	1	0	0	5	1.7	X			HIGH
T08-100	H	SE	U	3	0	0	0	0.0	X			HIGH
Class mean - Angora Ridge Upper (H-SE-U) =								**3.3ml/min**				
Number of samples by degree of hydrophobicity:									64	7	9	
Percentage of samples by degree of water repellency									**80%**	**9%**	**11%**	

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Angora Ridge Lower												
T01-0	H	SE	L	1	22	4	0	8.7			X	HIGH
T01-0	H	SE	L	3	15	1	0.5	5.5		X		HIGH
T01-10	H	SE	L	1	2	0.5	4.5	2.3	X			HIGH
T01-10	H	SE	L	3	0.5	7	10	5.8		X		HIGH
T01-30	H	SE	L	1	3	15	5	7.7		X		HIGH
T01-30	H	SE	L	3	0	1	0	0.3	X			HIGH
T01-60	H	SE	L	1	2	1	0	1.0	X			HIGH
T01-60	H	SE	L	3	0.5	0	10	3.5		X		HIGH
T01-100	H	SE	L	1	0	3	8	3.7		X		HIGH
T01-100	H	SE	L	3	1	0	1	0.7	X			HIGH
T02-0	H	SE	L	1	0	0.5	0.5	0.3	X			HIGH
T02-0	H	SE	L	3	0	0	0.5	0.2	X			HIGH
T02-10	H	SE	L	1	0.5	0	0	0.2	X			HIGH
T02-10	H	SE	L	3	0	0	0	0.0	X			HIGH
T02-30	H	SE	L	1	67.5	5.5	7	26.7			X	HIGH
T02-30	H	SE	L	3	2	23	30	18.3			X	HIGH
T02-60	H	SE	L	1	0	0	0	0.0	X			HIGH
T02-60	H	SE	L	3	0	0	0	0.0	X			HIGH
T02-100	H	SE	L	1	0	0	0	0.0	X			HIGH
T02-100	H	SE	L	3	0	0	0	0.0	X			HIGH

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Angora Ridge Lower (cont.)												
T03-0	H	SE	L	1	0	0	0	0.0	X			HIGH
T03-0	H	SE	L	3	0	0	0	0.0	X			HIGH
T03-10	H	SE	L	1	0	1.5	2	1.2	X			HIGH
T03-10	H	SE	L	3	0	3	2	1.7	X			HIGH
T03-30	H	SE	L	1	0	0	0.5	0.2	X			HIGH
T03-30	H	SE	L	3	0	0	0.5	0.2	X			HIGH
T03-60	H	SE	L	1	0	0	0	0.0	X			HIGH
T03-60	H	SE	L	3	0	1	0	0.3	X			HIGH
T03-100	H	SE	L	1	0	1	1	0.7	X			HIGH
T03-100	H	SE	L	3	0	0	0	0.0	X			HIGH
T04-0	H	SE	L	1	0	0	1	0.3	X			HIGH
T04-0	H	SE	L	3	1	2.5	0.5	1.3	X			HIGH
T04-10	H	SE	L	1	0	2	0	0.7	X			HIGH
T04-10	H	SE	L	3	10	2	1	4.3		X		HIGH
T04-30	H	SE	L	1	0	0	13	4.3		X		HIGH
T04-30	H	SE	L	3	0	0	0	0.0	X			HIGH
T04-60	H	SE	L	1	1	1	0	0.7	X			HIGH
T04-60	H	SE	L	3	3	2	0	1.7	X			HIGH
T04-100	H	SE	L	1	0	0	0	0.0	X			HIGH
T04-100	H	SE	L	3	0	0	0.5	0.2	X			HIGH

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Angora Ridge Lower (cont.)												
T05-0	H	SE	L	1	0	1	0	0.3	X			HIGH
T05-0	H	SE	L	3	0	1	0	0.3	X			HIGH
T05-10	H	SE	L	1	0	1	1	0.7	X			HIGH
T05-10	H	SE	L	3	0	0	6	2.0	X			HIGH
T05-30	H	SE	L	1	0	0	0	0.0	X			HIGH
T05-30	H	SE	L	3	0	0	0	0.0	X			HIGH
T05-60	H	SE	L	1	0	0	0	0.0	X			HIGH
T05-60	H	SE	L	3	0	0	0	0.0	X			HIGH
T05-100	H	SE	L	1	0	0	0.5	0.2	X			HIGH
T05-100	H	SE	L	3	0	0	0	0.0	X			HIGH
T06-0	H	SE	L	1	0	0	0	0.0	X			HIGH
T06-0	H	SE	L	3	0	0	4	1.3	X			HIGH
T06-10	H	SE	L	1	0	0	0	0.0	X			HIGH
T06-10	H	SE	L	3	0	0	1	0.3	X			HIGH
T06-30	H	SE	L	1	68	0	0	22.7			X	HIGH
T06-30	H	SE	L	3	1	2	0	1.0	X			HIGH
T06-60	H	SE	L	1	0	0	0	0.0	X			HIGH
T06-60	H	SE	L	3	1	0	1	0.7	X			HIGH
T06-100	H	SE	L	1	0.5	0.5	0	0.3	X			HIGH
T06-100	H	SE	L	3	0	1	1	0.7	X			HIGH

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Angora Ridge Lower (cont.)												
T07-0	H	SE	L	1	1	1	4	2.0	X			HIGH
T07-0	H	SE	L	3	0	4	0	1.3	X			HIGH
T07-10	H	SE	L	1	0.5	0	0	0.2	X			HIGH
T07-10	H	SE	L	3	3.5	0.5	0	1.3	X			HIGH
T07-30	H	SE	L	1	72	0	0	24.0			X	HIGH
T07-30	H	SE	L	3	0.5	0	0	0.2	X			HIGH
T07-60	H	SE	L	1	0	0	0	0.0	X			HIGH
T07-60	H	SE	L	3	0	0.5	0	0.2	X			HIGH
T07-100	H	SE	L	1	0	0	0	0.0	X			HIGH
T07-100	H	SE	L	3	0	0	2	0.7	X			HIGH
T08-0	H	SE	L	1	0	0	0	0.0	X			HIGH
T08-0	H	SE	L	3	0	0	0	0.0	X			HIGH
T08-10	H	SE	L	1	0	0	0	0.0	X			HIGH
T08-10	H	SE	L	3	0	0	0	0.0	X			HIGH
T08-30	H	SE	L	1	0	0	0	0.0	X			HIGH
T08-30	H	SE	L	3	0	0	0	0.0	X			HIGH
T08-60	H	SE	L	1	0	0	0	0.0	X			HIGH
T08-60	H	SE	L	3	0	0	0	0.0	X			HIGH
T08-100	H	SE	L	1	0	2	0	0.7	X			HIGH
T08-100	H	SE	L	3	0	0	0	0.0	X			HIGH
				Class mean – Angora Ridge Lower (H-SE-L):				**2.0 ml/min**				
				Number of samples by degree of water repellency:					68	7	5	
				Percentage of samples by degree of water repellency:					**85%**	**9%**	**6%**	

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Tahoe Mountain Lower												
T01-0	H	NE	L	1	16	39	39	31.3			X	MOD
T01-0	H	NE	L	3	7	5	9	7.0		X		MOD
T01-10	H	NE	L	1	29	9	7	15.0			X	MOD
T01-10	H	NE	L	3	20	2	2	8.0			X	MOD
T01-30	H	NE	L	1	24	11	9	14.7			X	HIGH
T01-30	H	NE	L	3	6	9	0	5.0		X		HIGH
T01-60	H	NE	L	1	39	20	8	22.3			X	HIGH
T01-60	H	NE	L	3	29	22	33	28.0			X	HIGH
T01-100	H	NE	L	1	1	0	1	0.7	X			HIGH
T01-100	H	NE	L	3	2	5	5	4.0		X		HIGH
T02-0	H	NE	L	1	2	0	1	1.0	X			HIGH
T02-0	H	NE	L	3	1	0	0	0.3	X			HIGH
T02-10	H	NE	L	1	3	10	0.5	4.5		X		HIGH
T02-10	H	NE	L	3	0	0	1	0.3	X			HIGH
T02-30	H	NE	L	1	3	17	0	6.7		X		HIGH
T02-30	H	NE	L	3	1	0	2	1.0	X			HIGH
T02-60	H	NE	L	1	0	6	16	7.3		X		HIGH
T02-60	H	NE	L	3	0	0.5	0	0.2	X			HIGH
T02-100	H	NE	L	1	29	1	26	18.7			X	HIGH
T02-100	H	NE	L	3	0	0	0	0.0	X			HIGH

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Tahoe Mountain Lower (cont.)												
T03-0	H	NE	L	1	30	7	6	14.3			X	HIGH
T03-0	H	NE	L	3	2	7	9	6.0		X		HIGH
T03-10	H	NE	L	1	20	11	8	13.0			X	HIGH
T03-10	H	NE	L	3	26	21	13	20.0			X	HIGH
T03-30	H	NE	L	1	10	1	3	4.7		X		HIGH
T03-30	H	NE	L	3	3	0	0	1.0	X			HIGH
T03-60	H	NE	L	1	87	59	5	50.3			X	HIGH
T03-60	H	NE	L	3	0	2	1	1.0	X			HIGH
T03-100	H	NE	L	1	50	37	5	30.7			X	HIGH
T03-100	H	NE	L	3	2	6	2	3.3		X		HIGH
T04-0	H	NE	L	1	26	27	23	25.3			X	HIGH
T04-0	H	NE	L	3	0.5	0	0.5	0.3	X			HIGH
T04-10	H	NE	L	1	0	0	0	0.0	X			HIGH
T04-10	H	NE	L	3	2	1	1	1.3	X			HIGH
T04-30	H	NE	L	1	8	1	0	3.0		X		HIGH
T04-30	H	NE	L	3	3	0	1	1.3	X			HIGH
T04-60	H	NE	L	1	6	1	5	4.0		X		HIGH
T04-60	H	NE	L	3	8	4	5	5.7		X		HIGH
T04-100	H	NE	L	1	3.5	2	1	2.2	X			HIGH
T04-100	H	NE	L	3	0	0	2	0.7	X			HIGH

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Tahoe Mountain Lower (cont.)												
T05-0	H	NE	L	1	44	15	12	23.7			X	MOD
T05-0	H	NE	L	3	21	4	9	11.3			X	MOD
T05-10	H	NE	L	1	15	35	25	25.0			X	MOD
T05-10	H	NE	L	3	30	5	21	18.7			X	MOD
T05-30	H	NE	L	1	3	14	15	10.7			X	MOD
T05-30	H	NE	L	3	5	1	0	2.0	X			MOD
T05-60	H	NE	L	1	4	1	0	1.7	X			MOD
T05-60	H	NE	L	3	1	0	1	0.7	X			MOD
T05-100	H	NE	L	1	6	18	12	12.0			X	MOD
T05-100	H	NE	L	3	8	13	10	10.3			X	MOD
T06-0	H	NE	L	1	37	25	10	24.0			X	MOD
T06-0	H	NE	L	3	34	22	32	29.3			X	MOD
T06-10	H	NE	L	1	21	6	19	15.3			X	MOD
T06-10	H	NE	L	3	37	18	14	23.0			X	MOD
T06-30	H	NE	L	1	0	0	0	0.0	X			MOD
T06-30	H	NE	L	3	6	12	5	7.7		X		MOD
T06-60	H	NE	L	1	1	2	9	4.0		X		MOD
T06-60	H	NE	L	3	1	0	3	1.3	X			MOD
T06-100	H	NE	L	1	19	0	11	10.0			X	MOD
T06-100	H	NE	L	3	11	21	18	16.7			X	MOD

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Tahoe Mountain Lower (cont.)												
T07-0	H	NE	L	1	0	9	2	3.7		X		HIGH
T07-0	H	NE	L	3	0	1	2	1.0	X			HIGH
T07-10	H	NE	L	1	3	1	9	4.3		X		HIGH
T07-10	H	NE	L	3	17	19	23	19.7			X	HIGH
T07-30	H	NE	L	1	8	29	27	21.3			X	HIGH
T07-30	H	NE	L	3	2	4	0.5	2.2	X			HIGH
T07-60	H	NE	L	1	1	0	0	0.3	X			HIGH
T07-60	H	NE	L	3	0	0	0	0.0	X			HIGH
T07-100	H	NE	L	1	28	11	8	15.7			X	HIGH
T07-100	H	NE	L	3	7	15	10	10.7			X	HIGH
T08-0	H	NE	L	1	2	9	5	5.3		X		HIGH
T08-0	H	NE	L	3	37	11	19	22.3			X	HIGH
T08-10	H	NE	L	1	7	2	8	5.7		X		HIGH
T08-10	H	NE	L	3	3	2	16	7.0		X		HIGH
T08-30	H	NE	L	1	44	40	63	49.0			X	HIGH
T08-30	H	NE	L	3	1	2	2	1.7	X			HIGH
T08-60	H	NE	L	1	3	0	2	1.7	X			HIGH
T08-60	H	NE	L	3	10	3	11	8.0			X	HIGH
T08-100	H	NE	L	1	0.5	12	0	4.2		X		HIGH
T08-100	H	NE	L	3	12	14	6	10.7			X	HIGH
			Class mean – Tahoe Mountain Lower (HS-NE-L):					**10.1ml/min**				
			Number of samples by degree of water repellency:						26	20	34	
			Percentage of samples by degree of water repellency:						**33%**	**25%**	**43%**	

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Boulder Mountain												
T01-0	M	SE	L	1	0	0	0	0.0	X			MOD
T01-0	M	SE	L	3	1	0	0	0.3	X			MOD
T01-10	M	SE	L	1	0	0	0	0.0	X			MOD
T01-10	M	SE	L	3	0	0	0	0.0	X			MOD
T01-30	M	SE	L	1	0	0	1	0.3	X			MOD
T01-30	M	SE	L	3	0	0	0	0.0	X			MOD
T01-60	M	SE	L	1	0	0	0	0.0	X			MOD
T01-60	M	SE	L	3	0.5	0	0	0.2	X			MOD
T01-100	M	SE	L	1	0	0	0	0.0	X			MOD
T01-100	M	SE	L	3	0	0	0	0.0	X			MOD
T02-0	M	SE	L	1	0	0	0	0.0	X			MOD
T02-0	M	SE	L	3	0	0	0	0.0	X			MOD
T02-10	M	SE	L	1	0	0	0	0.0	X			MOD
T02-10	M	SE	L	3	0	0	0	0.0	X			MOD
T02-30	M	SE	L	1	5	0	25	10.0			X	MOD
T02-30	M	SE	L	3	0	7	2	3.0		X		MOD
T02-60	M	SE	L	1	0	0	4	1.3	X			MOD
T02-60	M	SE	L	3	0	4	3	2.3	X			MOD
T02-100	M	SE	L	1	0	0	0	0.0	X			MOD
T02-100	M	SE	L	3	0	0	0	0.0	X			MOD

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Boulder Mountain (cont.)												
T03-0	M	SE	L	1	2	0	0	0.7	X			MOD
T03-0	M	SE	L	3	3	0	2	1.7	X			MOD
T03-10	M	SE	L	1	0.5	0	0	0.2	X			MOD
T03-10	M	SE	L	3	1	0	0	0.3	X			MOD
T03-30	M	SE	L	1	0	0	0	0.0	X			MOD
T03-30	M	SE	L	3	0	0	0	0.0	X			MOD
T03-60	M	SE	L	1	0	0	0	0.0	X			MOD
T03-60	M	SE	L	3	7	9	3	6.3		X		MOD
T03-100	M	SE	L	1	0	0	0	0.0	X			MOD
T03-100	M	SE	L	3	0	0.5	0	0.2	X			MOD
T04-0	M	SE	L	1	0	0.5	0	0.2	X			MOD
T04-0	M	SE	L	3	0	0	3	1.0	X			MOD
T04-10	M	SE	L	1	0	0	0	0.0	X			MOD
T04-10	M	SE	L	3	0	0	0	0.0	X			MOD
T04-30	M	SE	L	1	0	5	21	8.7			X	MOD
T04-30	M	SE	L	3	0	0.5	4.5	1.7	X			MOD
T04-60	M	SE	L	1	0	1	0	0.3	X			MOD
T04-60	M	SE	L	3	0	1	0	0.3	X			MOD
T04-100	M	SE	L	1	0	2	17.5	6.5		X		MOD
T04-100	M	SE	L	3	2	3	0	1.7	X			MOD

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Boulder Mountain (cont.)												
T05-0	M	SE	L	1	0.5	1.5	1	1.0	X			MOD
T05-0	M	SE	L	3	2	8	1	3.7		X		MOD
T05-10	M	SE	L	1	0	0	0.5	0.2	X			MOD
T05-10	M	SE	L	3	1	5	2	2.7	X			MOD
T05-30	M	SE	L	1	0	0	2	0.7	X			MOD
T05-30	M	SE	L	3	2	5	12	6.3		X		MOD
T05-60	M	SE	L	1	13	0	0	4.3		X		MOD
T05-60	M	SE	L	3	1	0	2	1.0	X			MOD
T05-100	M	SE	L	1	2	0	43.5	15.2			X	MOD
T05-100	M	SE	L	3	6	3	2	3.7		X		MOD
T06-0	M	SE	L	1	0.5	8	35	14.5			X	MOD
T06-0	M	SE	L	3	0	0	0	0.0	X			MOD
T06-10	M	SE	L	1	0	0	0	0.0	X			MOD
T06-10	M	SE	L	3	0	0	0	0.0	X			MOD
T06-30	M	SE	L	1	7	2	80	29.7			X	MOD
T06-30	M	SE	L	3	0	0	0	0.0	X			MOD
T06-60	M	SE	L	1	0	0	0	0.0	X			MOD
T06-60	M	SE	L	3	0	0	0	0.0	X			MOD
T06-100	M	SE	L	1	0	0	0	0.0	X			MOD
T06-100	M	SE	L	3	0	0.5	0	0.2	X			MOD
				Class mean – Boulder Mountain (MS-SE-L):				**2.2 ml/min**				
				Number of samples by degree of water repellency:					48	7	5	
				Percentage of samples by degree of water repellency:					**80%**	**12%**	**8%**	

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Tahoe Mountain Upper												
T01-0	M	NE	U	1	0.5	0	12	4.2		X		MOD
T01-0	M	NE	U	3	0	5	0	1.7	X			MOD
T01-10	M	NE	U	1	17	17	25.5	19.8			X	MOD
T01-10	M	NE	U	3	7	47	3	19.0			X	MOD
T01-30	M	NE	U	1	0.5	1	18	6.5		X		MOD
T01-30	M	NE	U	3	3	0	1	1.3	X			MOD
T01-60	M	NE	U	1	4	0.5	5	3.2		X		MOD
T01-60	M	NE	U	3	7	4	0	3.7		X		MOD
T01-100	M	NE	U	1	40	37	1	26.0			X	LOW
T01-100	M	NE	U	3	18	5	1	8.0			X	LOW
T02-0	M	NE	U	1	4	2	23	9.7			X	HIGH
T02-0	M	NE	U	3	24	62	47	44.3			X	HIGH
T02-10	M	NE	U	1	8	27	1	12.0			X	HIGH
T02-10	M	NE	U	3	50	1	14	21.7			X	HIGH
T02-30	M	NE	U	1	14	2	9.5	8.5			X	HIGH
T02-30	M	NE	U	3	0	5	5	3.3		X		HIGH
T02-60	M	NE	U	1	48	34	4	28.7			X	LOW
T02-60	M	NE	U	3	6	2	3	3.7		X		LOW
T02-100	M	NE	U	1	28	0	9	12.3			X	MOD
T02-100	M	NE	U	3	3	0	2	1.7	X			MOD

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Tahoe Mountain Upper (cont.)												
T03-0	M	NE	U	1	3	6	24	11.0			X	MOD
T03-0	M	NE	U	3	2	13	29	14.7			X	MOD
T03-10	M	NE	U	1	2	4	28	11.3			X	MOD
T03-10	M	NE	U	3	0	10	3	4.3		X		MOD
T03-30	M	NE	U	1	45	4	50	33.0			X	MOD
T03-30	M	NE	U	3	28	1	6	11.7			X	MOD
T03-60	M	NE	U	1	33	9	11	17.7			X	MOD
T03-60	M	NE	U	3	0	7	0	2.3	X			MOD
T03-100	M	NE	U	1	10	4	33	15.7			X	MOD
T03-100	M	NE	U	3	0	1	0	0.3	X			MOD
T04-0	M	NE	U	1	1	15	2	6.0		X		HIGH
T04-0	M	NE	U	3	32	8	2	14.0			X	HIGH
T04-10	M	NE	U	1	11	1	18	10.0			X	HIGH
T04-10	M	NE	U	3	25	18	1	14.7			X	HIGH
T04-30	M	NE	U	1	5	11	1	5.7		X		HIGH
T04-30	M	NE	U	3	1	5	0	2.0	X			HIGH
T04-60	M	NE	U	1	26	10	18	18.0			X	HIGH
T04-60	M	NE	U	3	13	10	57	26.7			X	HIGH
T04-100	M	NE	U	1	8	4	6	6.0		X		HIGH
T04-100	M	NE	U	3	1	17	11	9.7			X	HIGH

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
Tahoe Mountain Upper (cont.)												
T05-0	M	NE	U	1	3	4	12	6.3		X		MOD
T05-0	M	NE	U	3	1	3	10	4.7		X		MOD
T05-10	M	NE	U	1	10	3	2	5.0		X		MOD
T05-10	M	NE	U	3	0	0	0	0.0	X			MOD
T05-30	M	NE	U	1	25	20.5	6	17.2			X	MOD
T05-30	M	NE	U	3	0	0.5	2	0.8	X			MOD
T05-60	M	NE	U	1	10	27	6	14.3			X	MOD
T05-60	M	NE	U	3	1	1	0	0.7	X			MOD
T05-100	M	NE	U	1	1	2	17	6.7		X		MOD
T05-100	M	NE	U	3	11	15	1	9.0			X	MOD
T06-0	M	NE	U	1	90	15	1	35.3			X	HIGH
T06-0	M	NE	U	3	24	42	28	31.3			X	HIGH
T06-10	M	NE	U	1	31	19	21.5	23.8			X	HIGH
T06-10	M	NE	U	3	2	17	3	7.3		X		HIGH
T06-30	M	NE	U	1	11	17	40	22.7			X	HIGH
T06-30	M	NE	U	3	10	16	14	13.3			X	HIGH
T06-60	M	NE	U	1	30.5	27	21	26.2			X	HIGH
T06-60	M	NE	U	3	10	26	22	19.3			X	HIGH
T06-100	M	NE	U	1	77	7	52	45.3			X	HIGH
T06-100	M	NE	U	3	37	2	4	14.3			X	HIGH
			Class mean – Tahoe Mountain Upper (HS-SE-U):					**13.0 ml/min**				
			Number of samples by degree of water repellency						9	15	36	
			Percentage of samples by degree of water repellency						**15%**	**25%**	**60%**	

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (≥8)	Soil Erosion Hazard Rating
High School												
T01-0	H	NE	L	1	13	11	15	13.0			X	
T01-0	H	NE	L	3	30	21	14	21.7			X	
T01-10	H	NE	L	1	1	4	6	3.7		X		
T01-10	H	NE	L	3	5	4	6	5.0		X		
T01-30	H	NE	L	1	8	4	9	7.0		X		
T01-30	H	NE	L	3	11	22	12	15.0			X	
T01-60	H	NE	L	1	1	17	11	9.7				
T01-60	H	NE	L	3	7	1	0	2.7	X			
T01-100	H	NE	L	1	1	15	6	7.3		X		
T01-100	H	NE	L	3	26	14	50	30.0			X	
T02-0	H	NE	L	1	8	11	8	9.0			X	
T02-0	H	NE	L	3	8	12	1	7.0		X		
T02-10	H	NE	L	1	12	10	11	11.0			X	
T02-10	H	NE	L	3	21	11	17	16.3			X	
T02-30	H	NE	L	1	28	14	9	17.0			X	
T02-30	H	NE	L	3	11	12	8	10.3			X	
T02-60	H	NE	L	1	29	20	6	18.3			X	
T02-60	H	NE	L	3	18	13	9	13.3			X	
T02-100	H	NE	L	1	17	12	1	10.0			X	
T02-100	H	NE	L	3	1	20	3	8.0			X	

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
High School (cont.)												
T03-0	H	NE	L	1	45	43	51	46.3			X	
T03-0	H	NE	L	3	20	34	31	28.3			X	
T03-10	H	NE	L	1	9	19	14	14.0				
T03-10	H	NE	L	3	18	21	31	23.3			X	
T03-30	H	NE	L	1	9	9	6	8.0		X	X	
T03-30	H	NE	L	3	15	12	17	14.7			X	
T03-60	H	NE	L	1	12	4	16	10.7			X	
T03-60	H	NE	L	3	14	4	15	11.0			X	
T03-100	H	NE	L	1	28	10	28	22.0			X	
T03-100	H	NE	L	3	20	11	27	19.3			X	
T04-0	H	NE	L	1	6	10	13	9.7				
T04-0	H	NE	L	3	5	24	12	13.7				
T04-10	H	NE	L	1	6	12	15	11.0		X		
T04-10	H	NE	L	3	23	4	10	12.3			X	
T04-30	H	NE	L	1	5	0	8	4.3		X		
T04-30	H	NE	L	3	8	12	11	10.3				
T04-60	H	NE	L	1	5	1	31	12.3			X	
T04-60	H	NE	L	3	9	1	32	14.0		X	X	
T04-100	H	NE	L	1	22	9	12	14.3			X	
T04-100	H	NE	L	3	13	20	8	13.7			X	

SITE	SOIL BURN SEVER-ITY	SLOPE ASPECT	SLOPE POSITION	DEPTH	TEST 1 VOL (ml/min)	TEST 2 VOL (ml/min)	TEST 3 VOL (ml/min)	TEST MEAN (ml/min)	HIGH (0<3)	LOW (3 TO <8)	NONE (=8)	Soil Erosion Hazard Rating
High School (cont.)												
T05-0	H	NE	L	1	4	15	12	10.3				
T05-0	H	NE	L	3	20	11	11	14.0			X	
T05-10	H	NE	L	1	19	14	29	20.7		X	X	
T05-10	H	NE	L	3	13	12	8	11.0			X	
T05-30	H	NE	L	1	18	17	22	19.0			X	
T05-30	H	NE	L	3	16	10	6	10.7			X	
T05-60	H	NE	L	1	21	6	11	12.7			X	
T05-60	H	NE	L	3	18	24	17	19.7			X	
T05-100	H	NE	L	1	10	6	3	6.3		X		
T05-100	H	NE	L	3	10	10	7	9.0			X	
T06-0	H	NE	L	1	6	10	4	6.7		X		
T06-0	H	NE	L	3	13	6	19	12.7			X	
T06-10	H	NE	L	1	18	19	17	18.0			X	
T06-10	H	NE	L	3	25	12	25	20.7			X	
T06-30	H	NE	L	1	25	32	12	23.0			X	
T06-30	H	NE	L	3	13	37	15	21.7			X	
T06-60	H	NE	L	1	3	11	5	6.3		X		
T06-60	H	NE	L	3	18	27	19	21.3			X	
T06-100	H	NE	L	1	2	1	4	2.3	X			
T06-100	H	NE	L	3	25	21	22	22.7			X	
				Class mean – High School (HS-NE-L):				**14.0 ml/min**				
				Number of samples by degree of water repellency					2	9	49	
				Percentage of samples by degree of water repellency					**3%**	**15%**	**82%**	