2007 BEST MANAGEMENT PRACTICES EVALUATION PROGRAM REPORT

USDA FOREST SERVICE

LAKE TAHOE BASIN MANAGEMENT UNIT

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EXECUTIVE SUMMARY

In 2007, the Lake Tahoe Basin Management Unit (LTBMU) completed 32 Best Management Practices Evaluation Program (BMPEP) evaluations, as part of the Pacific Southwest Region's effort to evaluate the implementation and effectiveness of BMPs created for protecting soil and water resources associated with Timber, Engineering, Recreation, Grazing, and Revegetation activities. This was short of the Regional target of 41 evaluations, due to a lack of projects meeting the Regional target criteria for evaluation under Road Surface & Slope Protection (E08), Stream Crossing (E09), In-channel Construction Practices (E13), and Revegetation of Surface Disturbed Areas (V29).

In 2007, 84.35% of the evaluations were rated as effective, which is above the average of 82%, for the previous five years, and about the same as for 2006. The 84.35% rated effective were split into 78.1% rated "implemented and effective" and 6.25% rated "not implemented and effective". By contrast, the 15.65% of the BMPs that were rated ineffective were split 9.4% rated "implemented and not effective" and 6.25% rated "not implemented and not effective". A breakdown of the BMP ratings by program area is given in the table below:

	EFFECTIVE		NOT EFFECTIVE	
PROGRAM AREA	Implemented & Effective	Not Implemented & Effective	Implemented & Not Effective	Not Implemented & Not Effective
Timber (8 BMPs)	100%	0%	0%	0%
Engineering (14 BMPs)	64.3%	7.1%	14.3%	14.3%
Recreation (8 BMPs)	66.7%	16.7%	16.7%	0%
Other (4 BMPs)	100%	0%	0%	0%
All Averaged (32 BMPs)	78.1%	6.25%	9.4%	6.25%
	84.35%		15.65%	

The following actions are recommended to correct BMP deficiencies documented in this report.

- Special Uses should coordinate with Engineering and the Echo Lake Lodge permit holders to redesign the Echo Lake parking lot and nearby trail, to prevent sediments from entering the stream channel.
- BMPs within the Angora Creek SEZ at the Timber Road crossing should be revaluated and upgraded as part of the "Hazard Tree Removal Program for Roads and Trails associated with the Angora Fire", scheduled for 2009. Specifically, cut and fill-slope grading and road surface stabilization to prevent erosion and sediment transport to Angora Creek.
- Angora Trailhead BMPs should be revaluated and up-graded to decrease the risk of erosion and sediment transport posed by runoff from the paved parking area. Specifically, to insure sediment is not delivered to the nearby meadow.
- Campsites at Lions Trailhead should be located outside the SEZ and area BMPs should be revaluated. Specifically, sediment erosion and transport to the paved parking area should be remedied by maintenance or upgrading of existing BMPs.
- Meeks Road 14N13 and High Meadow Road 12N05 need to be evaluated for inappropriate or unauthorized use during wet periods. Specifically, determining who is causing the damage to these closed roads during wet periods and how it can be prevented in the future.
- Perform periodic and post-storm inspection of erosion control measures to insure that design and installation specifications are maintained. Specifically, those BMPs which may be compromised by the effects of heavy weather including: erosion control blankets, water bars and sediment fences.

1. INTRODUCTION

This report summarizes the results of the 2007, United States Department of Agriculture, Forest Service (USFS) Best Management Practices Evaluation Program (BMPEP), for the Lake Tahoe Basin Management Unit (LTBMU). The objectives of this program are to (i) fulfill USFS monitoring commitments to the State Water Resources Control Board (SWRCB), as described in the SWRCB/USFS Management Agency Agreement and *Water Quality Management for National Forest System Lands in California (USDA Forest Service, 2000),* (ii) assess and document the efficacy of the USFS water quality management program, specifically the implementation and effectiveness of BMPs; and (iii) facilitate adaptive management by identifying program shortcomings and recommending improvements.

2. OBJECTIVES AND METHODS

Onsite evaluations are used to assess both implementation and effectiveness of BMPs. Implementation evaluations determine the extent to which planned, prescribed and/or required water quality protection measures were actually put in place on project sites. Effectiveness evaluations gauge the extent to which the practices met their water quality protection objectives. Component ratings for project planning, implementation, and effectiveness are entered into the BMPEP database, along with the degree, duration, and extent of any problems that exist. Based on conditions observed during the evaluation, weight is applied to the component ratings to determine an overall rating for implementation and effectiveness.

Additional details regarding BMPs, protocols, and site selection can be found in *Investigating Water Quality in the Pacific Southwest Region, Best Management Practices Evaluation Program (BMPEP) User's Guide (USDA Forest Service, 2002)* and *Water Quality Management for National Forest System Lands in California (USDA Forest Service, 2000).*

BMP implementation evaluation forms ask a variety of specific questions intended to determine whether the project was executed as specified in project documents. A range of possible scores are assigned to each question depending on its relative importance and the degree to which a particular requirement is met (e.g., whether the project exceeds, meets, departs immaterially or substantially from requirements). Scores for all implementation questions are then summed and compared to a pre-determined threshold to conclude whether BMPs were implemented. BMP effectiveness is determined through qualitative water quality protection, observations (e.g., evidence of sediment delivery to channels) and quantitative measurements (e.g., amount of ground cover or percent of stream shade).

This scoring approach results in a 2 x 2 matrix, where a given suite of BMPs are placed into one of four categories: implemented and effective (I-E); implemented, but not effective (I-NE); not implemented, but effective (NI-E) and not implemented and not effective (NI-NE). A score of NI-E results when BMPs were not implemented, or were not installed according to specifications, and there is no evidence of potential water quality impairment. No evidence of impairment can result when (i) incorrectly installed BMPs were still effective, (ii) no BMP was necessary for the specific situation, (iii) no precipitation event occurred to provide evidence of impairment, or (iv) only project planning deficiencies were noted.

For sites with poor implementation or effectiveness scores, observers are asked to identify reasons and suggest corrective actions. For those sites with poor effectiveness, evaluators estimate the degree, duration and magnitude of any existing or potential impacts to water quality, based on published Region 5 guidelines. This type of "hillslope monitoring" uses indirect measures to evaluate BMP effectiveness: Poor scores represent potential, rather than actual, impairment of beneficial uses by a given activity.

Best Management Practices Evaluation Program protocols are applied to both randomly and non-randomly selected project sites. The number of random evaluations to be completed each year is assigned to the National Forests by the Regional Office based on (i) the relative importance of the BMP in protecting water quality in the Region and (ii) those management activities most common on the individual Forest. Forests can supplement these randomly selected sites with additional sites based on local monitoring needs, such as those prescribed in an environmental document. Only data from onsite evaluations made at randomly selected sites are used to assess BMP implementation and effectiveness at a Regional programmatic level.

Under certain circumstances, evaluations for E08 (Road Drainage Control), E09 (Stream Crossings), and E11 (Control of Sidecast Material) are conducted simultaneously at the same location.

3. RESULTS

3.1 Results Summary

The LTBMU evaluations are summarized in Table 1. The LTBMU completed 32 of the 41 Regional BMPEP assigned targets. Also six follow up evaluations were conducted at sites where BMP effectiveness failures were documented in 2006. *

In 2007, 85% of the evaluations were rated as effective, which is above the average of 82% for the previous five years (2001-2006) and the same as 2006. Of these 32 evaluations, 25 (78.25%) rated BMPs both implemented and effective, two (6.25%) rated BMPs not implemented and effective, three (9.5%) rated BMPs implemented and not effective, and two (6.25%) were rated not implemented and not effective. Deficiencies occurred in Engineering and Recreation evaluations. (Table 2)

* Because a limited number of projects meeting the Regional BMPEP selection criteria were available this year, targets were not met in four areas: Road Surface & Slope Protection (E08), Stream Crossing (E09), In-Channel Construction Practices (E13), and Revegetation of Surface Disturbed Areas (V29). Six follow-up evaluations include: two Landings for Agate (T04); Road Surface & Slope Protection for Angora Ridge Road (E08); Developed Recreation Sites for Echo Lake Trailhead (R22); Dispersed Recreation Sites for Watson Lake (R30), Revegetation of Surface Disturbed Areas for Powerline Trailbridge/ColdCreek(V29) and the Baldwin Grazing Allotment (G24).

Table1. 2007 BMPEP Targets and Selections for the LTBMU.

Evaluation	*Form*	*Region 5 Target*	*Available Project Sites*	*Evaluations*	*Project Site*
Streamside Management Zones	T01	1	4	1	Blackwood Canyon
Landings	T04	3	5	3	Ward Unit #5 x3
Timber Sale Administration	T05	1	1	1	Ward CTL Unit #9
Special Erosion Control & Revegetation	T06	3	5	3	Ward CTL Unit #9 x3
Road Surface & Slope Protection *	E08	5	3	2	Angora Road, Powerline Road @ Saxon Creek-12N08
Stream Crossings*	E09	4	3	2	Angora Road, Powerline Road @ Saxon Creek-12N08
Road Decommissioning	E10	2	2	2	Angora Road, Blackwood fish ladder
Control of Sidecast Material*	E11	2	3	2	Angora Road, Powerline Road @ Saxon Creek-12N08
In-channel Construction Practices	E13	4	3	2	Blackwood Bridge**,** Cookhouse Meadow
Rip Rap Composition	E15	1	2	1	Pope Beach
Management of Roads During Wet Periods	E20	3	4	3	Meeks Bay-14n42, High Meadow-12n21, Angora 12N23D
Developed Recreation Sites	R22	3	6	3	Taylor Creek Visitor Center, Angora Trail Head, Lions Trailhead
Dispersed Recreation Sites	R30	3	3	3	Luther Pass, Genoa Peak Road 14N32, Buck Lake
Range Management	G24	1	3	1	Baldwin Allotment
Prescribed Fire	F25	1	4	1	West of Taylor Creek
Revegetation of Surface Disturbed Areas	V29	4	2	2	Pope Beach, Cookhouse Meadow
TOTAL		41	53	32	

Table 2. Results of 2007 BMPEP Random Onsite Evaluations for the LTBMU, by Program Area.

		EFFECTIVE		NOT EFFECTIVE	
Program Area & Form	**Number of Evaluations**	**Implemented & Effective**	**Not Implemented & Effective**	**Implemented & Not Effective**	**Not Implemented & Not Effective**
Timber					
T01	1	1	0	0	0
T04	3	3	0	0	0
T05	1	1	0	0	0
T06	3	3	0	0	0
Subtotal #	8	8	0	0	0
Subtotal %		**100%**	**0%**	**0%**	**0%**
Engineering					
E08	2	1	0	0	1
E09	2	1	0	0	1
E10	2	2	0	0	0
E11	2	1	1	0	0
E13	2	2	0	0	0
E15	1	1	0	0	0
E20	3	1	0	2	0
Subtotal #	14	9	1	2	2
Subtotal %		**64.3%**	**7.1%**	**14.3%**	**14.3%**
Recreation					
R22	3	1	1	1	0
R30	3	3	0	0	0
Subtotal #	6	4	1	1	0
Subtotal %		**66.7%**	**16.7%**	**16.7%**	**0%**
Other					
G24	1	1	0	0	0
F25	1	1	0	0	0
V29	2	2	0	0	0
Subtotal #	4	4	0	0	0
Subtotal %		**100%**	**0%**	**0%**	**0%**
ALL BMPs (#)	**32**	**25**	**2**	**3**	**2**
ALL BMPs (%)		**78.1%**	**6.25%**	**9.4%**	**6.25%**
		84.35%		**15.65%**	

3.2 Results by Program Area

The following section outlines completed evaluations and provides a brief description of site specific issues and conditions.

~ Timber (Vegetation Management) ~

Timber evaluations are conducted on the LTBMU following fuels reduction projects, as opposed to commercial logging operations. In 2007, the Blackwood and Ward fuels reduction projects were evaluated. All eight timber evaluations rated BMPs implemented and effective.

Vegetation management projects were conducted utilizing a harvester/forwarder logging system, as opposed to tractor skidding equipment traditionally used outside the Basin. This equipment operates over a slash-mat with a reported ground pressure ranging from 4 psi for the harvester to 13 psi for a fully loaded forwarder. The harvester cuts standing trees, strips branches and loads logs onto the forwarder, which transports them to a landing area where they are loaded onto trucks. Pre-existing roads, or a chipped and slash covered area are used for landings to prevent additional ground disturbance. When fuels treatment/thinning operations are completed, residual slash consisting of limbs and branches is piled and burned, chipped, or masticated.

T01: Streamside Management Zones

Blackwood Canyon – Implemented & Effective

One SMZ evaluation was completed for both the Blackwood Canyon mechanical removal units #1.3, and unit #1.4. Both units are located on the north side of Blackwood Canyon Road and treatment was completed in 2006. This evaluation was rated implemented and effective. *

T04: Landings

Three Landing evaluations were conducted. All three evaluations rated BMPs implemented and effective.

Ward Unit 5 – Implemented & Effective

This Unit is located southwest of Tahoe City off of Highway 89 near Granlibakken. There were two landings evaluated for this Unit. One located at the end of Tahoe Woods Boulevard and another at the end of Alpine Way. The landings were covered with wood chips to a depth of >3.0 inches. At the Tahoe Woods Boulevard landing a short user defined trail extends below the landing and has developed into a shallow gully. This gully was not associated with BMP implementation or effectiveness at the landing, but is documented here for future remedy.

Blackwood Unit 1-4 – Implemented & Effective

This small landing is located north of Barker Pass Road, approximately ¼ mile west of Highway 89 on the west shore of Lake Tahoe. The landing was covered with woodchips to prevent soil compaction. Waterbars were installed to disperse overland flow that would otherwise reach Barker Pass Road. Some sediment was transported beyond the waterbars into the cut-slope ditch on Barker Pass Road. However, there is very little potential for sediment from this landing to impact water quality due to the length and nature of the flow path to the nearest SEZ or water body.

* In the Lake Tahoe Basin, the guidelines for SEZ protection, as defined by the Tahoe Regional Planning Authority (TRPA, Water Quality Management Plan for the Lake Tahoe Region, Volume III, SEZ Protection and Restoration Program, 1988), are stricter than those for Stream Management Zones (SMZs) as described by the Sierra Nevada Forest Plan Amendment (Region 5, USFS, Sierra Nevada Forest Plan Amendment, 2004). As a result, protection of SEZs must be addressed in contracts and NEPA documents. All BMPEP evaluations will consider protection of SEZs, which by default ensures protection of SMZs. An SMZ is a designated buffer between the stream channel and the harvest area. A 25 ft. buffer is set for ephemeral streams (50 ft. for over-winter harvest) and 100 ft. for perennial streams.

T05: Timber Sale Administration

Ward Unit 5 – Implemented & Effective
One Timber Sale Administration evaluation was completed for Ward Unit 5. This unit is located west of Highway 89 at the end of Tahoe Woods Boulevard and approximately 1 mile south of Tahoe City. The average post project ground cover area from chips and slash was approximately 90%. No problems were identified at this unit.

T06: Special Erosion Control and Revegetation

Three Special Erosion Control and Revegetation evaluations were conducted at Wards Unit 9, where special erosion control measured were used. These evaluations included two forwarder trails and one landing. All evaluations rated BMPs implemented and effective.

Ward Unit 9 - #1 – Implemented & Effective
For this unit, a forwarder trail, located in T15N R16E section 13, NESE, at the end of Alpine Way, was evaluated for Special Erosion Control and Revegetation BMPs. The road was covered with chips after project implementation, to prevent excessive soil compaction and displacement. The road currently has over 97% cover.

Ward Unit 9 - #2 – Implemented & Effective
This forwarder trail is located next to Ward Unit 9-#2 (near Unit 9-1). The trail was covered in wood chips after project implementation to prevent excessive soil compaction and displacement. The road currently has over 90% cover with effective waterbars in place.

Ward Unit 9 - #3 – Implemented & Effective
This landing is located in T15N R16E section 13, SENE on an existing section of trail. The landing was covered with wood chips after project implementation to prevent excessive soil compaction and displacement. The landing currently has over 84% soil cover and functional waterbars in place.

~ Engineering ~

E08: Road Surface, Drainage, and Slope Protection
E09: Stream Crossings
E11: Control of Sidecast Material

The regional target of five BMPEP evaluations for E08, E09, and E11 was not fulfilled by the LTBMU due to a lack of qualifying projects implemented in 2006. Only two projects qualified for evaluations in 2007; Powerline Road at Saxon Creek (stream crossing up-grade), and Road 12N23 Spur or “Timber Road”.

Powerline Road at Saxon Creek 12N08Y
Powerline Road is an access road that connects the Meyers Landfill to Pioneer Trail Road. The bridge crossing at Saxon Creek was reconstructed in 2006.

E08: Road Surface, Drainage, and Slope Protection - *Implemented and Effective*

This road was graveled and the bridge crossing the stream was paved. There was no evidence of sediment from the road reaching the stream. Rip rap was used for bank stabilization adjacent to the bridge. On the southwest bank, there is a small user defined path to the creek (see photo). This path has the potential to deliver sediment to the Creek but is not the result of inadequate BMPs.

E09: Stream Crossings - *Implemented and Effective*

Some ponding was observed on the gravel road surface before the crossing but does not threaten water quality.

E11: Control of Sidecast Material – *Implemented and Effective*

Some sidecast material was observed in areas revegetated for erosion control, but was not significant.

Road 12N23, Timber Road (Located in the Lower Angora Creek Watershed at Angora Creek Crossing)

This road is part of a system of unpaved roads located in the Lower Angora Creek Watershed. It is one of two roads that continue to be used for access to Seneca Pond and fire suppression. This road branches off of 12N20, which is a designated administrative road used behind a year-round locked gate. Road 12N23 divides several hundred feet before reaching the Angora Creek crossing and rejoins itself at the crossing. The lower branch of the road enters the SEZ approximately 100 feet down gradient from the crossing and travels adjacent to the creek, rejoining the main road at the crossing. The following evaluations were conducted before the June 24, 2007, Angora Fire, on May 10, 2007. A post-fire evaluation was conducted on August 8, 2007 to identify any changes since the initial evaluation which may have resulted from the fire or fire suppression activities. No significant differences were noted between the before and after fire, E08, E09 and E11, evaluations. BMP's in this area are scheduled to be retrofitted as part of the hazard tree removal program for roads and trails associated with the Angora fire, in 2009.

E08: Road Surface, Drainage, and Slope Protection - *Not Implemented and Not Effective*

Poor maintenance of several water-bars was observed. On the lower branch road one water-bar was filled with sediment while another was channeling sediment into Angora Creek. All water-bars within the SEZ need to be upgraded so sediment is diverted away from the Angora Creek channel.

E09: Stream Crossings - *Not Implemented and Not Effective*

Less than 50% of fillslope has effective soil cover and numerous rills/gullies have formed on east side of the Angora Creek channel crossing. So far, the main slope into the SEZ has remained stable but erosion of the creek bank into the channel was observed. There is significant erosion

of the road surface at the crossing, causing a large hole to form in the surface of the road over the culvert. The road surface has collapsed due to water flowing around the outside of the culvert.

E11: Control of Sidecast Material – *Not Implemented and Effective*

Small amounts of side cast material were observed on the stream banks adjacent to the Angora Creek crossing. No evidence of any subsequent erosion was noted.

E10: Road Decommissioning

Two decommissioned roads were evaluated including: Blackwood Fish Ladder Road and Angora Road (12N20d).

Blackwood Fish Ladder (temporary, non-system, access road) - Implemented and effective

This road is located at the end of Blackwood Canyon Road near where it becomes an OHV road and is closed year round to both public and administrative use. It was temporarily used during the removal of a fish ladder in 2003, which is part of the reconstruction of the Blackwood Creek channel. This road was effectively revegetated to approximately 90% cover. The road is saturated during the spring and summer months. Large boulders are used to effectively restrict vehicle access. Compaction, ponding or erosion were not observed

Road 12N20D - Implemented and effective

In 1995-96, 1.5 miles of 12N20D was decommissioned. Decommissioning was accomplished by ripping, seeding and mulching with straw and woody debris. No evidence of erosion was identified during the evaluation

E13: In-Channel Construction Practices

The following two projects were completed in 2006.

Cookhouse Meadow - Implemented and effective

Cookhouse Meadow is located 4.5 miles south of Highway 50 on Highway 89. Big Meadow Creek flows through the 25 acre meadow. The old channel was abandoned and a new channel was constructed to reconnect the stream channel to the floodplain. The construction was completed in the fall of 2006. The stream was dry in early July. No evidence of channel or surface erosion or sediment transport was observed.

Barker Road Crossing (Blackwood Canyon Road) - Implemented and effective

The Barker Road Crossing is located in Blackwood Canyon, on the west shore of Lake Tahoe. The project included removal of an eight foot culvert under Barker Pass Road and replacing it with a multi-span bridge. The project was completed in November, 2006. While this site received successful rating for both implementation and effectiveness, some minor concerns were noted. Specifically, subsidence of sand and pebble size material between rip rap boulders in the left bank flood control jetty was occurring. Also, signage or barricades preventing unauthorized vehicles from entering the reconstructed area was not observed. Depressions created between

the rip rap boulders were backfilled and barriers blocking access to the area were installed in the spring of 2007.

E15: Rip Rap Composition

Pope Beach-Implemented and Effective

Boulder fill-slope protection was completed in 2006 for the Pope Beach parking lot, where the road makes a looped return midway through the parking area. This project was part of the Pope Beach Phase II project which included BMP upgrades, replacement of restroom facilities, and road improvements. A minor concern was noted regarding foot traffic short cutting across the rip rapped area causing boulders to be dislodged. A designated path was installed but is not used exclusively.

E20: Management of Roads During Wet Periods

The E20 protocol was applied to three administrative roads to evaluated implementation and effectiveness of management of these roads during wet periods. Administrative roads are seasonally closed to all but emergency and authorized use in order to prevent wet weather damage. Under LTBMU policy, Forest Service staff are directed to refrain from using administrative roads during wet periods.

Meeks Road 14N13-Implemented and Not Effective

This evaluation was conducted on May 22, 2007 when road conditions were still wet. This 100 foot road transect is located within the Meeks Creek SEZ. Part of the road is from 10 to 20 feet from the stream channel. The road was observed being used by seasonal Forest Service staff during this evaluation. Ruts were observed being created in the road surface during this evaluation. Minor amounts of sediment from the road were observed entering the SEZ.

Road 12N23, Timber Road -Implemented and Effective

This road connects 12N23 to 12N20 and can be accessed from ether road. It was evaluated in May 2007, before the July, 2007, Angora Fire. The gated access to this road was locked and no evidence of wet period use was observed.

High Meadow Road 12N05-Implemented and Not Effective

This road starts at the end of High Meadow Trail and is closed year-round except for authorized administrative and private land owner use. In the 100 ft transect of this road, sediment was observed impacting a perennial stream which travels on the road surface for about 15 feet before leaving the road and reentering the stream channel. On the east side of the crossing, the water bar is effectively diverting runoff, but the diverted water eventually enters the stream channel approximately 45 feet down slope. On the west side of the crossing, the water bar was effective at controlling sediment transport but was nearly filled with sediment and allowing some water to flow over the saturated road surface. Gravel was observed covering deep tire ruts in one persistently wet and eroding area. The road is being used during wet periods as indicated by deep tire tracks and ruts, even though it is gated and locked.

~ Recreation~

R22: Developed Recreation Sites

Sites included in the random sample pool are selected from "all developed recreation sites on the Forest where the Forest Service provides a service such as sanitation, water or refuse removal, etc." Selected sites included Taylor Creek, Lions Trailhead, and Angora Trailhead.

Taylor Creek Visitor Center-Implemented and Effective

This site is located near Taylor Creek where the water flows through the aquarium and returns to Taylor Creek. There were no BMP failures observed at this site

Lions Trailhead (Bayview Campground Trailhead)-Not Implemented and Effective

This Desolation Wilderness trailhead is located at Bayview Campground near Emerald Bay. Eroded sediment was observed being transported across the paved parking area. Also, four campsites are located within 25 feet of an ephemeral stream. There was no evidence of sediment delivery to the channel from the campsites. A culvert near the parking area was partially filled and should have debris removed.

Angora Trailhead- Implemented and Not Effective

The Angora Trailhead is a paved parking area for access to Angora Lakes. Design features are not implemented to control water runoff from the pavement into the nearby meadow. This condition poses a risk of erosion and sediment transport to the meadow during heavy rain.

R30: Dispersed Recreation Sites

Dispersed Recreation Sites are sites that "receive continued and concentrated use and are maintained at least annually by the Forest Service." The BMPs at three sites; Bucks Lake, Luther Pass, and Genoa Peak Road, were all rated as implemented and effective.

Bucks Lake-Implemented and Effective

This dispersed camping area is located off Forest Service Road 14N56 on the west slope of the Lake Tahoe Basin. There are 4 established campfire rings within 30-40 feet from the lake. This evaluation was conducted after Labor Day. There were no signs of erosion or sediment transport into Bucks Lake.

Genoa Peak Road 14N32-Implemented and Effective

This area is a parking area with an interpretive sign for OHV and hiking trail users. It is located at the end of Castle Rock Road in Kingsbury Village. The BMPs were evaluated after Labor Day weekend. There was no observed erosion or sediment transport into Burke Creek.

Luther Pass-Implemented and Effective

Luther Pass recreation site is located off of Highway 89 near Grass Lake. It is a small area with no facilities or camping. It consists of a gravel area for parking and access to a trail that leads to Hope Valley in the Toiyabe National Forest. There is evidence of some sediment being transport

from the parking area to a paved trail, however the site does not pose a risk to water quality of Grass Lake

~ Other Evaluations ~

G24: Range Management

Baldwin Allotment – Implemented & Effective

The Baldwin Allotment is the only active grazing allotment in the Lake Tahoe Basin and is located north of Highway 89 on the south shore of Lake Tahoe. Since it is the only qualifying site for this evaluation, it is not a random selection and BMPs are evaluated every year. The Allotment consists of five pastures in which the horses are rotated throughout the grazing period. In 2007, horses were permitted to graze for seven days on pasture C, which is in the upland pasture and out of the SEZ. Less than 10% of the grazing area was used this year for that purpose.

F25: Prescribed Fire

Cathedral #3 Prescribed Burn – Implemented & Effective

The Cathedral burn is located west of Taylor Creek and south of Highway 89. This 48 acres hand-pile burn was completed in September of 2006. The hand piles were left from a fuels reduction project implemented in 2005 The resulting ground cover was approximately 80%, over the target of 60%. The burn area does not pose a risk to water quality as Taylor Creek and Tallac Creek are approximately one half mile away. Also, post-burn cover estimates and hydrophobicity tests met standards.

V29: Revegetation of Surface Disturbed Areas

Because only two projects were implemented in 2006 that met the criteria, the regional target of four Revegetation of Surface Disturbed Areas evaluations was not met in 2007. The two projects that were rated are Pope Beach and Cookhouse Meadow. Both evaluations rated BMPs implemented and effective. Revegetation here-in refers to restoration efforts that increase effective ground cover by using woody material and rock, and seeding with native grasses to improve ground stability and minimize erosion.

Cookhouse Meadow – Implemented & Effective

During channel reconstruction, impact to vegetation was minimized by using sod borrows, Veg. plugs and native seed mix on the meadow soil. There was no evidence of rilling or sediment deposition in the SEZ observed during this evaluation.

Pope Beach – Implemented & Effective

While this site received successful rating for both implementation and effectiveness, a minor problem was observed during project implementation. The erosion control blankets used to stabilize the slope did not stay firmly in place during and after windy conditions. Ground cover was approximately 85% (even though the erosion control blankets were blown off) which exceeds the objective of 60%.

4. FOLLOW UP EVALUATIONS

The 2006 BMPEP Report recommended the following six follow-up evaluations be conducted to verify weather corrective measures were taken to address documented areas or issues of concern. Of six BMP follow-up evaluations two (33%) remain ineffective.

R30: Watson Lake Dispersed Camping Area- Implemented and Effective

The Watson Lake Dispersed Camping Area is a primitive camping and recreational site, with no sanitation or refuse facilities. It was rated unsuccessful for implementation in 2006 because of insufficient ground cover.

The 2007 follow-up evaluation documented no evidence of erosion. The area between the northernmost campsites and the western shore of the lake was reported to have insufficient groundcover in 2006. This area is now covered with gravel.

V29: Beaver Bridge on Cold Creek –Effective (2007)

Site is located of Pioneer Trail Road. Although the 2006 BMP evaluation was rated successful for implementation and effectiveness, one potential problem area, located just northwest of the bridge, was identified as having steep slopes and loose soil. This area was identified as having the potential for future erosion and a follow-up evaluation was recommended in the 2006 BMPEP Report. The 2007 follow-up did not identify any erosion and there was no evidence of sediment being transport to the creek.

G24: Baldwin Allotment – Implemented & Effective (2007)

See Page-12 above for the 2007, G24 evaluation.

E08: Angora Ridge Road –Effective (2007)

The 2006 report rated Road Surface, Drainage and Slope Protection (E08) for Angora Ridge Road as unsuccessful for implementation and effectiveness. Temporary or permanent BMPs were not prescribed for the project. The rating of not effective resulted from a minor amount of sediment from the fill-slope reaching a spring channel next to the road which drains into the meadow. The 2007 follow up did not identify any sediment reaching the spring channel. Coir logs have been installed between the road and the meadow and are currently effective. No further evaluation is necessary.

T04: A-Gate –Not Effective (2007)

A-Gate was rated unsuccessful for implementation and successful for effectiveness in 2006 due to a lack of proper erosion control at the landing. Water bars and coir logs were not spaced sufficiently close together to prevent storm water runoff from causing erosion and sediment transport. The 2007 follow up identified a gully approximately 2”deep, 16” wide and 30’ long, between the landing and a seasonal channel. Logs were put in place as erosion control but were not effective.

R22: Echo Lake Trailhead –Not Effective (2007)

This site was rated unsuccessful for implementation and effectiveness in 2006 due to the lack of design features to convey runoff from the lower parking lot and sediment was observed entering Echo Creek below the dam outlet. The 2007 follow up evaluation was rated not effective because the runoff and sediment continue to enter the SEZ. The parking lot and the trail need proper drainage features to prevent runoff and sediment from reaching the creek. It is currently not scheduled for BMP retrofit.

5. SUMMARY / RECOMMENDATIONS

Forest wide BMPs in 2007 were 84.35% effective. Ineffective BMPs occurred primarily in the Engineering program evaluations (related to Angora Road 12n20 and High Meadow Road12n05), and the Recreation program (two locations) related to trailheads and parking.

Of six BMP follow-up evaluations two (33%) remain ineffective. Follow-up evaluations to be conducted in 2008 will include all projects not implemented or effective in 2007. (See Table-2)

The following actions are recommended to correct BMP deficiencies documented in this report.

- Special Uses should coordinate with Engineering and the Echo Lake Lodge permit holders to redesign the Echo Lake parking lot and nearby trail, to prevent sediments from entering the stream channel.
- BMPs within the Angora Creek SEZ at the Timber Road crossing should be revaluated and upgraded as part of the "Hazard Tree Removal Program for Roads and Trails associated with the Angora Fire", scheduled for 2009. Specifically, cut- and fill-slope grading and road surface stabilization to prevent erosion and sediment transport to Angora Creek.
- Angora Trailhead BMPs should be revaluated and up-graded to decrease the risk of erosion and sediment transport posed by runoff from the paved parking area. Specifically, to insure sediment is not delivered to the nearby meadow.
- Campsites at Lions Trailhead should be located outside the SEZ and area BMPs should be revaluated. Specifically, sediment erosion and transport to the paved parking area should be remedied by maintenance or upgrading of existing BMPs.
- Meeks Road 14N13 and High Meadow Road 12N05 need to be evaluated for inappropriate or unauthorized use during wet periods. Specifically, determining who is causing the damage to these closed roads during wet periods and how it can be prevented in the future.
- Perform periodic and post-storm inspection of erosion control measures to ensure that design and installation specifications are maintained. Specifically, those BMPs which may be compromised by the effects of heavy weather, including erosion control blankets, water bars and sediment fences.

6. REFERENCES

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