

## **Conservation Projects and Environmental Improvement Projects (EIPs) in the Upper Truckee Meadows Community Watershed:**

### **General Background**

The Upper Truckee River Community Watershed (UTRCW) is located in the southern side of the Lake Tahoe Basin primarily in eastern El Dorado County and partially in northern Alpine County. The UTRCW contains the subwatersheds of Camp Richardson (2,652 acres) as well as the Upper Truckee River (36,224 acres), of which is the largest watershed in the Lake Tahoe Basin. The total drainage area of the UTRCW is 69.7 square miles, and the main drainages are The Upper Truckee River, Angora Creek, Sawmill Pond Creek, Big Meadow Creek, and Grass Lake Creek. The northern portion of the watershed consists of the urban areas of South Lake Tahoe and Meyers, whereas the southern portion is primarily US Forest Service land managed by the Lake Tahoe Basin Management Unit.

The main channel of the Upper Truckee River is 21.4 miles long and originates in the volcanic bluffs surrounding Meiss Meadow near Carson Pass. The river then flows northward through a series of meadows and lakes until it reaches an 800-foot glacial step over, where it enters the head of Christmas Valley. The river flows through Christmas Valley until it is met by Angora Creek, downstream of the present-day Lake Tahoe Golf Course (LTGC). After converging with another unnamed tributary near the tenth hole of the LTGC, the UTR continues to flow northward through Sunset Ranch, the Lake Tahoe Airport, and to the eastern side of the Tahoe Keys through Cove East where it drains to Lake Tahoe.

The watershed entirely includes the residential communities of Camp Richardson, Tahoe Keys, the Y Area, Meyers, and Christmas Valley and partially includes the Sierra Tract, Apalachee, Tahoe Mountain, and Golden Bear residential communities. Also included in The Upper Truckee River Community Watershed are the Upper Truckee Meadows Planning Area and the Meyers-Pioneer Trail Community Planning Area.

The Upper Truckee River was once the most productive fishery in the Lake Tahoe Basin and held special significance for the Washoe Tribe. In the Washoe Claims Case, Washoe consultants rank the Upper Truckee River Watershed as the most valuable resource area in the Lake Tahoe Basin. The extensive meadow and wetland system occurring in the UTRW was highly valued for its utilization as a fishery as well as a plant resource area. There are 46 recorded prehistoric sites within the UTRW with Washoe place names existing for a variety of camp and resource locations.

Euro-American presence in the UTRW began in 1848 when John Calhoun Johnson opened a travel route over Echo Summit through lower Lake Valley. With the benefit of newly created access routes, homesteaders and cattle ranchers soon began inhabiting and using the areas surrounding the route from the 1850s to the 1890s. After the early settlement of the Lake Valley vicinity, small scale logging occurred in surrounding areas from 1859 to 1870 in order to

supply timber for settlements. It wasn't until 1874, when the Carson and Tahoe Lumber and Fluming Company (CTLFC) began acquiring and harvesting timber tracts in Lake Valley and surrounding areas, that logging had occurred at a large scale. It is noted that the years between 1889 and 1891, one year after the completion of the Lake Valley Rail Road, were those years when logging activity was the most intensive; the entire Lake Valley was cutover by 1897.

The following decades (1890s to the 1930s) saw the decline of logging activity in the lower UTRW and the expansion of ranching/grazing activity. Land transfers from timber operators to ranchers became a common occurrence during this time period, as the majority of the timber holdings had been completely cutover and at that point only afforded sheep and cattle grazing. Grazing and dairy production continued through the end WWII, when eventually land holdings had begun to transfer into the ownership of what was formerly known as the El Dorado National Forest and managed for conservation.

Development in the UTR within the last 50 to 60 years has been primarily associated with tourist and recreational activities, and has been no exception to the intensive land use history associated with the watershed. The creation of the Tahoe Keys subdivision in the early 1960s in the historic wetland of the UTR marks the impact of the largest wetland in the entire Sierra Nevada. Additional developments worthy of mention in the watershed include the creation of the Lake Tahoe Airport, two golf courses, as well as the extensive residential development in and around the City of South Lake Tahoe.

Today, historic hydrologic disturbances associated with Euro-American land uses have created a legacy of environmental impacts and management challenges within the UTRW. Modifications include the straightening of stream channels, filling of natural floodplains for transportation routes and structures, and the conversion of marshes and meadows to grazing pastures and home sites. These disturbances have fundamentally shifted the natural geomorphic balance that had created and maintained ecological integrity within the watershed for thousands of years. In attempts to regain geomorphic and ecological function, management strategies have focused on hydrologic modification and restoration actions that seek return the system to a more natural, self-regulating state.

The Upper Truckee Meadows Community Watershed Partnership focus area within the UTRCW is located along the Highway 50 corridor in the city of South Lake Tahoe. The selection of this area is result of a rigorous prioritization process through communication and collaboration with key agency stakeholders. A needs assessment was conducted within selected sub-watershed/neighborhoods of the Upper Truckee River Watershed to determine existing natural resource issues and to begin the collaborative process of engaging community members.

### **Locations of Interest**

Urban Areas of South Lake Tahoe and Meyers

Residential areas of Camp Richardson, Tahoe Keys, Y Area, Meyers, and Christmas Valley. Partial inclusion of Sierra Tract, Tahoe Mountain, Apalachee, and Golden Bear residential communities.

Upper Truckee Meadows Community Planning Area

Camp Richardson, Truckee Marsh, Tahoe Keys, Lake Tahoe Airport, Tahoe Valley, Lake Valley State Recreation Area, Washoe Meadows State Recreation Area, Tahoe Paradise Golf Course

Portions of the USFS managed Desolation Wilderness

### **Recreational Opportunities**

Hiking  
Biking  
OHV  
Golfing  
Cross Country Running and Skiing  
Snowshoeing  
Snowmobiling  
Tennis  
Soccer  
Baseball/Softball  
Equestrianism  
Rafting/Kyaking  
Fishing  
Rock Climbing

### **Physical and Natural Characteristics**

Watershed Area: 60.7 square miles

Hydrologic Features

Rivers and Creeks: Upper Truckee River, Angora Creek, Sawmill Pond Creek, Echo Creek, Big Meadow Creek, Grass Lake Creek

Lakes: Grass Lake, Round Lake, Meiss Lake, Upper Echo Lake, Lower Echo Lake, Saucer Lake, Ralston Lake, Cagwin Lake, Tamarack Lake, Four Lakes, Showers Lake, Dardanelles Lake, Elbert Lake, Cagwin Lake

Wetlands: Grass Lake, Osgood Swamp, Truckee Marsh, Benwood Meadow, Big Meadow

### **Topography**

Percent Impervious Surface: information coming soon ...

Range of Slopes: From 0% at lake level to nearly 50% in the upper altitudes of the watershed.

Geology: Characterized by lake and glacial deposits at lower altitudes, flatlands, and low-lying hills; and by granitic rocks that make up the steep and high mountain slopes and peaks. The only existing volcanic rocks are in the extreme headwaters of the watershed, and the only metamorphic rocks are two small areas above Echo Lake and two small areas in the low lying hill between the City of South Lake Tahoe and Fallen Leaf Lake.

Climate: Precipitation (occurring mostly in the form of snow between the months of November and April) ranges from nearly 25 inches to greater than 60 inches, with a general decrease from west to east.

Vegetation: Composed primarily of coniferous forest with lodgepole pine, ponderosa pine, Jeffrey pine, white fir, red fir, western white pine, mountain hemlock, and sugar pine. Alders, aspen, willows, and grasses are common along the stream zones.

Wildlife and Habitat: As listed in the 2011 "Plant Community Characterization and Ranking of Fens in the Lake Tahoe Basin, California and Nevada," produced by the California Native Plant Society in cooperation with the USDA Forest Service Lake Tahoe Basin Management Unit, 22 individual fens (peat-forming wetlands that are among the most sensitive habitat types in the Sierra Nevada) were located within the watershed.

### **Land Use Characteristics**

Prehistoric/Pre-Euro-American: 46 sites identified

Out of a list of the 10 most desirable watersheds in descending order of resource value, Washoe Testimony from the Washoe Land Claims Case ranks the Upper Truckee River Watershed as the most valuable fishery in the Lake Tahoe Basin.

Historic:

1848: John Calhoun Johnson opens a route over Echo Summit and through lower Lake Valley (Highway 50/Pioneer Trail/Highway19/207)

1851: Martin Smith is the first settler in Lake Valley

1852: Emigrants Camp is established in Lake Valley

1854: Asa Hershel homesteads 160 acres in Lake Valley and pioneers new route into upper Lake Valley; Luther Pass is surveyed

1859: Stations are established along the new road through Lake Valley (Highway 50/Pioneer Trail)

1859-1870's: Small-scale logging to supply lumber for local settlers and way stations; first recorded fishery is established at the Mouth of the Upper Truckee River  
1850-1860s: development of seasonal farming and ranching in the Lake Valley  
1860: Pony Express route is designated through Lake Valley over Echo Summit (Highway 50/Pioneer Trail/Highway19/207); same route is heavily used by passengers and freight wagons en route to the Comstock  
1861: Post office is established in Lake Valley  
1875: Lake Valley Ranchers contribute most of the 800 tons of hay cut in Tahoe  
1874-1895: Carson and Tahoe Lumber and Fluming Company (CTLFC) acquire timber tracts in Lake Valley and surrounding areas  
1880s-1890s: Bartons graze dairy cattle on Barton Meadows  
1888: peak year for CTLFC saw log/cordwood production in Lake Valley  
1889-1891: years of most intensive timber Harvest in Lake Valley  
1897: Lake Valley is completely cutover  
1898: a fire starts near Meyers in September and sweeps up the mountains to the east; Lake Valley Rail Road torn up and used as a tourist railroad between Truckee and Tahoe City  
1911: C.G. Celio and Sons operate lumber mill at Meyers and conduct small-scale logging  
1930's: Meyers subdivision is thriving  
1940's: Highway 50 over Echo Summit is an improved all-weather road with year-round maintenance  
1950's: Expanded gaming industry at Lake Tahoe  
1955-1970s: Timber stands around Meyers are reentered and logging occurs on small scale.  
1958: Celio ceases lumber operations  
1959-early 1960s: Construction and establishment of the Tahoe Keys  
1980s-1990s: modern logging limited to fuelwood and saw log sales aimed at fire and vegetation management

## **Conservation Projects and Environmental Improvement Projects (EIPs)**

### **Upper Truckee River Upper Reach Environmental Assessment (TRCD, LRWQCB, USBR)**

The focus and nature of this assessment is to examine the Upper Truckee River for opportunities to restore its natural function while addressing the land use and economic factors surrounding land uses to assess how restoration can occur.

### **Upper Truckee River Restoration and Golf Course Reconfiguration Project (C-Parks, TRPA, BR)**

California State Parks, U.S. Bureau of Reclamation, and Tahoe Regional Planning Agency are pursuing a proposed restoration project along the reach of the Upper Truckee River that extends from its upstream entry point at the southern boundary of Washoe Meadows State Park to the point west of U.S. Highway 50 where the river exits Lake Valley State Recreation Area. The primary purpose of the project is to restore natural geomorphic and ecological processes along this reach of river and to reduce the river's suspended sediment discharge to Lake Tahoe.

**Upper Truckee River Lahontan Cutthroat Trout Restoration Project (USFS)**

The purpose of the project is to reclaim 10 miles of stream habitat for federally threatened LCT in the Upper Truckee River. There is a need to assist with the natural range expansion from the Meiss Meadow source population by removing undesired competition and genetic introgression from introduced brook trout (*Salvelinus fontinalis*) and rainbow trout (*Oncorhynchus mykiss*). The Meiss Meadows population is the only self-sustaining population of LCT in the Lake Tahoe Basin, and successful implementation of this project will insure its future viability.

**EIP # 0009: Highway 50 Echo Summit to SR 89 Runoff Treatment (Caltrans)**

CalTrans will construct erosion control, drainage & guardrail improvements on Hwy 50 from Echo Summit to the intersection with SR 89.

**EIP # 00611: CTC Cove East Recreation Access (CTC)**

Realign trail access to Lake Tahoe from Venice Drive, east through Lower West Side Restoration project.

**EIP # 00650: Christmas Valley SEZ Restoration (CTC)**

If found to be in need, restore 40 acres of SEZ on lands that have been acquired by the public in the subdivided, developed, and disturbed areas within the limits of El Dorado County

**EIP # 00706: Echo View Erosion Control Project (El Dorado)**

CTC has identified needs for revegetation, rock-lined ditches, curbs, gutters, storm drains, and rock slope protection within the Echo View subdivision. Treatment facilities (sediment basins) may also be required. CTC reference is Sawmill ECP.

**EIP # 00874: Echo Summit Enhanced Barrier Rail (CALTRANS)**

Caltrans should install a "modified barrier" rail along US 50, Echo Summit as a final phase of the Safety Rail Replacement Project. The goal is replicate the form, color and texture of the original barrier. FHWA support will be sought.

**EIP # 10080: Aspen Community Restoration Projects (TRPA, C-Parks, USFS)**

On a landscape scale, aspen communities provide for habitat diversity. This project is intended to build from the "Aspen community spatial distribution and condition assessment".

Restoration projects will focus on those aspen stands that have been identified as in a deteriorating condition. Restoration project should attempt to re-invigorate declining aspen communities using a variety of techniques such as conifer removal, mild burning, group selection thinning, and mechanical pushing. The goal of this project is to re-establish vigorous and self-sustaining, unevenaged stands of aspen throughout the region.

**EIP # 00767: Class One: S.R. Highway 89 15th Street to Current USFS Class One Trail (El Dorado)**

A class one bicycle trail will be constructed to connect 15th Street with the southern end of the USFS bicycle trail to Camp Richardson. This project spans the City and County line.

**EIP #00831: Emerald Bay Trolley Service Improvements (SSTMA)**

Fallen Leaf Lake and Emerald Bay are popular summer destinations for visitors. Providing transit services during the summer visitation period to these destinations is planned to reduce congestion and improve the visitor experience within these two areas. With the physical restrictions as well as any planned restrictions on parking, this can also positively impact recreation.

**EIP # 00984: Marina/Site Master Plan – Camp Richardson (USFS)**

Camp Richardson/under their contract agreement with the USFS will draft a master plan and associated environmental documents for the marina and upland resort.

**EIP # 10101 Vallhalla Pier Rehabilitation (USFS)**

Rehabilitate the storm damaged pier at the Valhalla Estate Boat House, to allow for public access, and potential mooring.

**EIP # 00503: Scenic Road Unit #2 Camp Richardson Improvement (USFS)**

Reduce excess signage, install landscape screening, especially along campground, reduce clutter and distractions visible from roadway, underground utility lines, improve organization of uses along roadway at resort.

**EIP # 10001: Roadway Unit # 2; Camp Richardson (USFS)**

Landscape and screen parking areas; Landscape, revegetate and screen group campground; prevent roadside parking.

**EIP # 00913: Scenic Shore Resource #3.3 Jameson Beach Improve (USFS)**

USFS, Camp Richardson and Jameson Beach shall develop project to reduce the amount of man-made clutter along the shoreline at Camp Richardson and better screen the existing houses at Jameson Beach and underground utility lines.

**EIP # 10102: Angora Lookout Rehabilitation and Interpretative Facility (USFS)**

Rehabilitate the Angora Lookout and upgrade facility for public use, interpretive displays, parking and restrooms.

**EIP # 00406: Angora Creek Through Subdivision – Stream Habitat Restoration (CTC)**

Adjust channel morphology in area of subdivision where creek has become entrenched, stabilize banks with vegetation, and improve passage at two existing culverts by baffling or bridging

**EIP # 00949: Angora Creek Stream Re-diversion off Sewer Line (C-Parks)**

Project would re-divert stream back to its original channel. Angora Creek currently runs directly over a sewer line for approx. 900 feet. Restore 2 acres of SEZ, 0.5 acres of meadow habitat improvement, and 0.1 acres of riparian and stream habitat improvements.

**EIP # 00985: Angora Creek Subdivision SEZ Restoration (El Dorado)**

Four acres of hydrology and floodplain restoration, and channel stabilization on Angora Creek between Lake Tahoe Blvd. and View Circle. Restore 40 Acres SEZ in El Dorado County.

**EIP # 00705: Angora Highlands/Boulder Mt (El Dorado)**

CTC has identified conveyance and treatment needs within Angora Highlands and on Boulder Mt. Drive. Revegetation, curbs, gutters, storm drains, retaining walls and rock slope protection needed. Sediment basins may also be required.

**EIP # 00193.2: Angora Creek ECP II**

**EIP # 00013: South Y industrial Tract SEZ/ Erosion Control (CSLT)**

Erosion source controls and stormwater treatment facilities associated with grantees roadways. Improvements will include: revegetate. of disturbed soils; (e.g., paved gutters, rock lined channels); infiltration and sedimentation facilities (e.g., veg. treatment ponds and various sediment traps).

**EIP # 00950: Upper Truckee River Bank Stabilization – Lake Valley (C-Parks)**

Implement a range of stabilization treatments along eroding stream banks. Treatments would include riparian plantings, native materials revetment, riprap revetment and retaining walls less than 0.2 acres of SEZ preservation.

**EIP # 00993: Highway 50 Meyers to the “Y” (CALTRANS)**

Hwy 50 from SR 89 intersection in Meyers to the South Tahoe Wye. Installation of road runoff treatment facilities and erosion control features is needed along the remaining road segments primarily between Meyers and airport, airport to "Wye".

**EIP # 00560.1: Upper Truckee – Cove East SEZ Restoration (CTC)**

CTC will restore the mouth of the upper Truckee River and floodplain adjacent to the Tahoe Keys from Hwy 50 to the lake. Will include the mouth of Trout Creek. CTC has broken this project into two phases: 560.1 (Lower West Side) and 560.2 (Upper Truckee River Restoration). The units of benefits have been combined for both phases.

**EIP # 00556: Upper Truckee – Airport SEZ Restoration (CSLT)**

Restore floodplain and stabilize channel. Fence out or remove cattle from channel area. Approximately 40 acres of restoration potential.

**EIP # 00399: Upper Truckee River/Lower Phase III – Stream Habitat Restoration (CTC)**



Upper Truckee stream channel reconstruction -stabilize stream banks and channel from Hwy 50 to up stream of airport. Improve substrate and vegetative cover. Establish a grazing management plan for land managers (USFS,CTC, C-Parks) Phase I, II, and III will assist 21.8mi of stream to good, with cove East at excellent condition.

**EIP # 00908: Habitat Restoration – Upper Truckee/ Upper Section (CTC)**

In the upper reaches of the Upper Truckee and its tributaries the main habitat improvement need is bank stabilization. Along many of these reaches past grazing practices have caused bank erosion. Hikers on some reaches have current impacts.

**EIP # 00612: CTC Elks' Club Upper Truckee River Raft Access (CTC)**

CTC will construct public raft launching and parking for Upper Truckee River near Elks Club Road.

**EIP # 00699: Gardner Mt West "Y" and 10th Street (CSLT)**

Conveyance and treatment facilities remaining at West "y" and 10th St. remaining to be implemented

**EIP # 00784: U.S. Highway 50 and Tahoe Keys Blvd Intersection Improvements (CSLT)**

Intersection improvements for the Tahoe Keys and US 50 intersection have been identified that will improve traffic flow. One of the primary features involves creation of a right turn lane westbound onto Tahoe Keys Boulevard. Another right turn pocket will be added to the right turn from Tahoe Keys Boulevard onto US 50.

**EIP # 00795: U.S. Highway 50 and S.R. Highway 89 (South) Intersection Improvements (CSLT)**

CalTrans and the City of South Lake Tahoe will follow through on a plan to make intersection improvements to the South Wye (SR 89 and US 50 intersection) that improve the level of service for the intersection. In addition to the bulk of the funding, CSLT has collected some mitigation money for improving the intersection from project applicants looking to offset their impacts to the intersection.

**EIP # 00708: Christmas Valley (El Dorado)**

CTC has identified 3 CIP'S in this area which need re-vegetating: rock lined ditches, curbs, gut, retaining walls, and rock slope protection. Treatment facilities (sediment basins) also likely required.

**EIP # 00736: El Dorado County Sawmill Bike Path (El Dorado)**

Construct Class I and II bike trail segment linking Meyers Trail with Tahoe Valley State Recreation area, and Sawmill road.

**EIP # 10034: Class Two: Sawmill Road U.S. 50 to Lake Tahoe Blvd (El Dorado)**

Construct class two bike trail along Sawmill Road between US 50 and Lake Tahoe Blvd.

**EIP # 00407: Big Meadow Creek – Stream Habitat Restoration (CTC)**

Remove the cows from meadow area, reconstruct bridge in order to increase stabilization of banks (not in USFS plan), stabilize head cuts, fly in cobble (USFS,CTC).

**EIP # 00965.04: Meiss Area Trails**

**EIP # 01007: Facilities BMP Retrofit Needs Study (USFS)**

USFS will begin conducting an inventory of BMP retrofit needs on USFS administration sites, recreation sites, resorts, organizational camps and recreation residence tracts in 1998. Development of individual site plans and BMPs will follow, somewhat developed by USFS for EIP update, needs cost for each need.

**EIP # 10131: Upper Truckee Guard Station Site Enhancements (USFS)**

Install BMP's and erosion control.

**Research and Monitoring Data**

**Pope Marsh Burn Monitoring Report 1995 – 1997 (USFS)**

The purpose of this document is to present the results of water quality and soil monitoring conducted in 1995, 1996 and 1997 in Pope Marsh. Monitoring was conducted to evaluate the impacts of an 11 acre controlled broadcast burn conducted within Pope Marsh in September of 1995.

**Pope Marsh Burn Monitoring Report Update 1995-1998 (USFS)**

The Pope Marsh Burn was a controlled 11 acre broadcast burn that was conducted in September of 1995. Water quality, soil, and revegetation monitoring was implemented between 1995 and 1997 to determine the impacts of the burn. The purpose of monitoring was: 1) To determine if water quality of Pope Marsh above and below the burn meets applicable California State standards; 2) To determine if burn activity produced an increase of sediment and/or nutrient levels in Pope Marsh; 3) To determine how quickly the burned area revegetated after the burn.

**Soil Quality Analysis Results Pope Marsh Timber sale 3-8-1995 (USFS)**

Timber was removed in late summer and fall of 1994 as a part of the Pope Marsh Fuelwood Sale, which included removal of dead and dying lodgepole pine located in isolated stands within Pope Marsh. Monitoring of soil compaction was conducted to determine whether marsh and forest soils located within the sale area were compacted from vehicles driving within the marsh. Samples from areas where vehicle traffic occurred were compared to undisturbed "control" samples, and these results are presented in this report.

**Biomonitoring on the Upper Truckee River Using Aquatic Macroinvertebrates: Watershed Restoration Baseline Data for 19998-2000 (LRWQCB)**

These surveys describe the longitudinal or downstream changes in aquatic habitat conditions along the main stem of the river from Christmas Valley to South Lake Tahoe. The studies occurred during a period of changing stream flow, from above to below average run-off over

1998-2000. The data provide a basis for future contrasts of changes in habitat, water quality and aquatic biological integrity in the Upper Truckee River.

**Angora Creek Water Quality Monitoring Report 1991-2000 (El Dorado)**

In 1996, El Dorado County began two projects designed to control erosion and accelerated runoff generated by the Monitan View Estates subdivision. Two sites on Angora Creek were selected as surface water monitoring locations to evaluate project effectiveness toward decreasing sediment and nutrient input to Angora Creek.

**Angora Creek Stream Environment Zone Restoration Project Monitoring Program Progress Report #2 (El Dorado)**

This progress report is the second in a series that describes monitoring activities for the Angora Creek Stream Environment Zone Restoration Project covering the period of October 2002-March 2003. Monitoring of hydrologic, geomorphic, and biologic parameters for this project began in the spring of 2002. Monitoring activities will continue following project construction to provide data documenting the performance and benefits of this restoration project.

**Angora Creek Water Quality Analysis After the 2007 Angora Fire (USFS)**

This report presents the results of water quality monitoring conducted in 2011, near the downstream boundary of USFS lands within the area burned by the Angora Fire. The 2011 data is presented along with the results from previous data collection and analysis efforts at this site, dating back to 1991

**Grass Lake Research Natural Area Water Quality Monitoring Report Spring Runoff 1994 (USFS)**

This report presents an analysis of water quality monitoring data collected during spring runoff in 1994 to evaluate the impacts of road salts on water quality and vegetation within the area of the Grass Lake Research Natural Area (GLRNA). The GLRNA was established in 1991, and contains a high mountain meadow sphagnum bog which supports a boreal fauna unusual for Sierra Nevada.

**Angora Burn Area Monitoring Plan (TSC)**

The Angora Ridge fire burned approximately 3,100 acres of land area in the southwest portion of the Lake Tahoe Basin, California in the early summer of 2007. This plan describes the monitoring efforts recommended for five topic areas: 1) air quality, 2) upland soils and erosion control effectiveness, 3) stream geomorphology, 4) water quality, and 5) biological resources.

**Angora Resource Management Project Best Management Practices Report 1999-2001 (USFS)**

From 1999-2001, the Lake Tahoe Basin Management Unit completed 48 Best Management Practices (BMPs) evaluations within the Angora Resource Management Project area to evaluate the effectiveness of BMPs associated with both Timber and Engineering activities. Each evaluation performed rates a suite of BMPs associated with a specific project or management activity. Seventy-one percent of the total evaluations performed were rated as effective.

**Meiss Grazing Allotment Fecal Coliform Data Analysis 2000 (USFS)**

The U.S. Forest Service Lake Tahoe Basin Management Unit manages the Meiss grazing allotment in the Upper Truckee River subwatershed. This allotment has been monitored from 1991 to 2000 to assess for riparian and water quality impacts. In 1999, the LTBMU was issued a notice of violation for discharges of wastes in excess of Lahontan Basin Plan water quality objectives for fecal coliform. As a result, the Forest Service is mandated to develop a more effective management strategy based on the monitoring data outlined in this report.