

## Research Projects SNPLMA Round 7



Record Number	Lead Scientist	Institutions	Project Title	Project Description	Theme	Dollar Amount
1A2	Kuhns, Hampden	Desert Research Institute, UC Davis	Examination of Dust and air-borne sediment control demonstration projects.	Quantify the cost effectiveness of different road dust control strategies applied in the Lake Tahoe Basin.	Air Quality (\$400K total)	\$ 380,255
2C5	Schladow, S. Geoffrey	UC Davis	Predicting and Managing Changes in Near-Shore Water Quality	Develop a process-based understanding of the controls on four primary water-quality issues impacting the near-shore zone: near-shore clarity, periphyton (attached algae) growth, distribution and factors facilitating the spread of nonnative plant and fish species, fate of pollutants in the near-shore zones	Water Quality (\$1M total)	\$ 312,959
2B6	Simon, Andrew & Langendoen, Eddy	USDA Agricultural Research Service, Valley and Mountain Consulting	Application of Enhanced Stream-Corridor Modeling Tools for Adaptive Management of Tahoe Basin Streams	Enhance and further validate the predictive, numerical models CONCEPTS and BSTEM to fully realize their potential as state-of-the-art tools for stream management	Water Quality (\$1M total)	\$ 432,235
2B3	Beck, Nichole G.	2nd Nature, Bryn Mawr College, CA Parks, River Run Consulting	Methodology to Predict Total and Fine Sediment Load Reductions as a Result of Channel Restoration in Lake Tahoe Streams	Develop, verify and document site specific fine sediment monitoring protocols to quantify and predict the sediment load reductions as a result of stream restoration projects and improve the Basin-wide empirical relationships between fine particles (<63 um and <20 um) and total suspended sediment loads.	Water Quality (\$1M total)	\$ 106,350
2A11	Elliot, William	USFS Rocky Mountain Research Station, U of Idaho	Assessing the Sources and Transport of Fine Sediment in Response to Management Practices in the Tahoe Basin using the WEPP Model	Develop a process-based tool that watershed managers in the Lake Tahoe basin can use to objectively evaluate the impact of specific management practices on the generation of fine (< 20 micron) sediment transport at the hillslope and watershed scales.	Water Quality (\$1M total)	\$ 232,149
3A10	Verburg, Paul S. J.	Desert Research Institute	Potential nutrient emissions from prescribed fire in the Lake Tahoe basin	Assess the potential impacts of prescribed fire on air and water quality as a function of antecedent conditions (e.g. fuel type and fuel moisture) by combining laboratory experiments, field fuel inventories and GIS-based spatial analysis.	Forest Management (\$500K total)	\$ 265,682
3A11	North, Malcolm	USFS Pacific Southwest Research Station	Restoration and Fuel Treatment of Lake Tahoe's Riparian Forests	Determine the pre-suppression fire return interval, fire intensity, and historic stand structure and composition of riparian forests in white fir, mixed-conifer and Jeffrey pine forests of the Tahoe Basin and using reconstruction information and Fuels Management Analyst software, work with managers to develop targets for surface and ladder fuels by size class for different riparian forests.	Forest Management (\$500K total)	\$ 122,436
4A06	Waring, Kristen M.	Northern Arizona University, UC Berkeley	Restoring sugar pine in the Tahoe Basin: regeneration ecology and recruitment dynamics of sugar pine under various stand structures.	Enhance conservation and recruitment of sugar pine using multiaged stand management and restoration strategies by quantifying sugar pine regeneration and growth requirements and rates in the Lake Tahoe Basin mixed-conifer forests.	Ecological Community (\$475K total)	\$ 183,788
4A10	Vogler, Detlev R.	USFS Pacific Southwest Research Station, UC Davis	Natural and anthropogenic threats to white pines from lower montane forests to subalpine woodlands of the Lake Tahoe Basin: An ecological and genetic assessment for conservation, monitoring, and management	Establish a network of ecological monitoring plots in lower montane mixed conifer forests (focal species-sugar pine), upper montane forests (focal species western white pine), and subalpine woodlands (focal species-whitebark pine) in the LTBMU to identify population structure and evaluate stressors associated with each of the 3 focal species, identify population genetic structure and diversity, and WPBR-resistance frequency, for populations of each focal species, develop demographic models to determine population dynamics, and develop and test the efficacy of conservation and restoration strategies.	Ecological Community (\$475K total)	\$ 224,016
5B1	Foltz, Randy	USFS Rocky Mountain Research Station, U of Montana, Washington State	Improving Road Erosion Modeling for the Lake Tahoe Basin and Evaluating BMP Strategies for Fine Sediment Reduction at Watershed Scales	Reduce sediment entering Lake Tahoe by improving and validating the WEPP model applications for road management in the Lake Tahoe Basin. This includes: parameterize the WEPP model for the Lake Tahoe Basin, improve WEPP: Road interface for the Lake Tahoe Basin, validate the WEPP model for the Lake Tahoe Basin, and develop a GIS-based quantitative approach to predict the sediment loading using WEPP and identify erosional "hot spots" from a watershed-scale road network and determine the optimal road network design that minimizes sediment production through BMP application and road decommissioning.	BMP (\$500K total)	\$ 201,705
5B6	Heyvaert, Alan	Desert Research Institute, UC Davis	Development of a BMP Performance Assessment and Data Analysis System for the Tahoe Integrated Information Management System (TIIMS)	Develop standardized protocols for monitoring, reporting, and evaluating BMP performance in Lake Tahoe and create a functional database populated with Lake Tahoe specific hydrologic and water quality data to inform BMP performance predictions, BMP design, and BMP maintenance approaches.	BMP (\$500K total)	\$ 285,803
6A07	Pavlik, Bruce	BMP Ecosciences	Analysis of 15 Years of Data From the California State Parks Prescribed Fire Effects Monitoring Program	Analyze the existing CDPR dataset to evaluate the effects of prescribed fire treatments on vegetation composition and structure, fuel loading, and potential fire behavior in mixed conifer stands. The collected data can be used to address the following questions: what is the effect of fuels treatments on the rate and direction of forest succession, fuel loading, and fuel configuration compared to not treating at all; how effective are prescribed fire treatments in altering fire behavior, improving suppression effectiveness, and reducing fire severity under the range of fireweather conditions likely in the Lake Tahoe Basin, do prescribed fire treatments change the balance of native or non-native understory vegetation?	Cross Cutting (\$525K total)	\$ 21,988
6A11	Engelbrecht, Johann	Desert Research Institute, UC Davis	Receptor Modeling Study to determine the sources of observed ambient particulate matter (PM) in the Lake Tahoe Basin.	Determine the sources of observed PM in the Lake Tahoe Basin; including analyze the LTADS and DRI data to distinguish sub-sets of site and seasonal data to assess seasonal trends, use multivariate statistical procedures to identify factors and groups of chemical species of relevance within the measured data set, compile a set of chemical source profiles applicable to the receptor modeling of the LTADS ambient results and apply the CMB receptor model to the LTADS data to determine the sources of the observed PM.	Cross Cutting (\$525K total)	\$ 90,742
6A09	Heyvaert, Alan	Desert Research Institute	Tahoe Basin Particle Size Analysis and Protocol Development	Create a uniform, consistent and inter-comparable data base that includes all available data on particle size distribution and composition for Lake Tahoe's streams, urban runoff, the atmosphere and for the lake itself.	Cross Cutting (\$525K total)	\$ 197,898
6B4	Schladow, S. Geoffrey	UC Davis, NASA JPL	Monitoring Past, Present, and Future Water Quality Using Remote Sensing	Utilize remotely sensed (satellite) data to provide a quantitative management tool for lake-wide assessments of water quality and to link changes in water quality to discrete sources at the sub-watershed (e.g. the Incline Creek watershed) scale.	Cross Cutting (\$525K total)	\$ 162,414
	Tahoe Science Consortium	UC Davis, UN Reno, Desert Research Institute, PSW Research Station, USGS	Tahoe Science Consortium	The Consortium promotes integration among the many current and future scientific projects in the basin, prioritizing future research informed by a comprehensive science plan, creating an environment that promotes the contributions of the best available science, and emphasizing close cooperation with land and resource managers to facilitate the transfer of information in an effective manner.		\$ 315,000
		PSW Research Station	Project Administration	Federal sponsor administration (project reporting, budget management, administration of grants, etc.)		\$ 214,580
<b>Totals</b>						<b>\$ 3,750,000</b>