

# **A PROPOSED FRAMEWORK FOR DEVELOPING AN ADAPTIVE ENVIRONMENTAL MANAGEMENT SYSTEM WITHIN THE LAKE TAHOE WATERSHED**

**John Tracy, Executive Director**

Center for Watersheds and Environmental Sustainability  
Desert Research Institute, 2215 Raggio Parkway, Reno, NV 89511  
(775) 673-7385, tracy@dri.edu

## **ABSTRACT**

Over its history, Lake Tahoe has been considered a valuable exploitable resource to surrounding populations that have relied on it to help sustain or fuel growth in the regional economy. Originally the basin was utilized by the native Pauite people for harvesting of food and fiber for hundreds of years. To help support the Comstock boom during the mid to late 1800s, much of the coniferous forest was harvested (over 60% of the basin was denuded) for lumber. An outlet dam was constructed and made permanent near the start of the 20<sup>th</sup> century so that the top six feet of the Lake could be used as a reservoir to store water for newly created irrigation projects in the Truckee Meadows, Fernley and Newlands areas of Nevada. While the top of Lake Tahoe is still used as a storage reservoir for downstream domestic and agricultural water supplies, much of the economy of Lake Tahoe is now directly or indirectly tied to recreational activities, ranging from the gaming industry on the Nevada side of Lake Tahoe to natural resource recreational activities on the Lake and in its upland watersheds.

While there has always been concern for the environmental condition within the Lake Tahoe basin, only recently have attempts been made to manage development and activities within the basin to mitigate impacts that human activities have had on its environment. These efforts began with the formation of the Tahoe Regional Planning Agency (TRPA) through the bi-state Tahoe Regional Planning compact between Nevada and California. The TRPA is charged with attaining and maintaining environmental threshold carrying capacities so that the unique values of the Lake Tahoe basin can be protected. To aid in this effort, the TRPA created the Thresholds Program, which was designed to be a comprehensive evaluation of the environmental conditions within the Lake Tahoe basin. The most recent Threshold report, published in draft form near the end of 2001, indicates that only 8 of the threshold indicators are within desired limits, while 25 indicators are not within desired limits and the status of three indicators are reported as unknown. In its current form the Thresholds Program is limited in its usefulness for aiding environmental management within the watershed because it focuses on developing a regulatory based report card of environmental conditions, rather than information that can be used to manage the basin's environment in a sustainable fashion. This paper presents a prototype approach to developing an environmental management system within the Lake Tahoe basin based on sustainability principles, and implemented in an Adaptive Management Framework. A subset of the current threshold indicators is evaluated as to their usefulness in aiding environmental management within the Tahoe basin. Based on this evaluation, a framework for developing suites of environmental management indicators and feedback rules is presented for use within the Tahoe basin. If successfully implemented, this framework could substantially accelerate environmental restoration efforts within the basin, and be used to develop more effective environmental management systems in Inter-Mountain West watersheds.