

STUDY TOUR SUPPORTING CONSERVATION LAND USE PLANNING FOR BIODIVERSITY PROTECTION IN EUROPE AND CENTRAL ASIA

Summary: Regional Planning Initiatives and Methods in the Lake Tahoe Watershed, California USA, 28 September – 10 October, 2002.

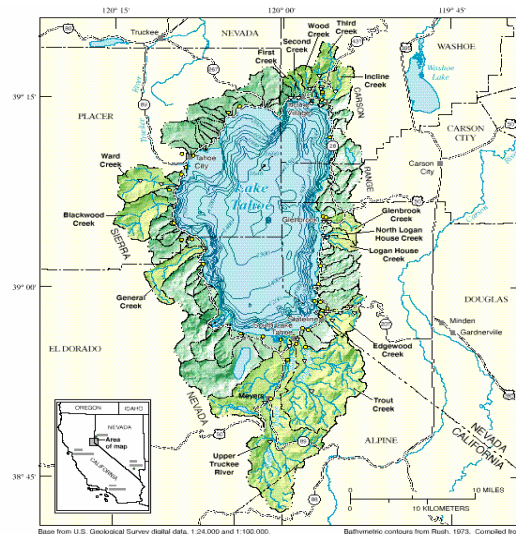
The World Bank, in partnership with the Tahoe-Baikal Institute, gathered 22 participants from 6 former Soviet republics working on four World Bank biodiversity projects to study resource management in the Lake Tahoe watershed. Specifically, the tour examined the integration of science, policy, and economics for land use planning around Lake Tahoe, focusing on the need for cooperative partnerships in program planning and implementation. The program was also designed to promote collaboration among biodiversity projects that face similar challenges in the Europe and Central Asian (ECA) region. On the last day participants used their own skills and backgrounds in a modeling exercise designed to apply the lessons learned from Tahoe to their own countries.

The study tour was organized through the Tahoe-Baikal Institute, an international NGO that conducts training programs in watershed management for two large lake ecosystems (Tahoe and Baikal); both facing challenges in balancing development and conservation. This brief provides background information on Lake Tahoe, reflections on Lake Tahoe's unique regional planning methods, the activities of the World Bank study tour, and participant response to the study tour.

Purpose of the Study Tour

The purpose of the study tour was to demonstrate the tools and methods involved in a regional conservation planning effort, in particular the:

- collaboration of institutions, government and civil society organizations, and the private sector; and their incentives for participation;
- importance of public participation; and
- results-oriented planning and monitoring relying on scientific inputs.



The Participants

The study-tour brought together specialists and decision makers from six former Soviet republics including Kazakhstan, Kyrgyzstan, Uzbekistan, Ukraine, Georgia and Moldova. Their objectives were to learn about the cross-sectoral, stakeholder-based approaches developed in Lake Tahoe and to share experiences and lessons learned in biodiversity conservation efforts since the breakup of the Soviet Union. The participants came from professionally and culturally diverse backgrounds, thereby enriching discussions, meetings, and informal exchange during the study tour. Representing four World Bank/GEF biodiversity projects, participants were united in their interests and concern despite their diverse backgrounds. The mix led to sharing of cross-country experiences and laid the groundwork for continued collaboration and assistance to one another.

Four projects were represented, each concerned with the integration of protected areas management and mainstreaming biodiversity into the production landscape outside of protected areas. These projects are:

- The Central Asia Transboundary Biodiversity project (US\$10.15 million; Kazakhstan, Uzbekistan and the Kyrgyz Republic) is developing a bioregional plan for the greater

West Tien Shan ecosystem that integrates activities within the protected areas, their buffer zones, and corridors that connect them.

- The Georgia Protected Areas Development project (\$9 million). This project includes development of a multiple use management plan for the Central Caucasus ecoregion (together with the IDA Forestry Project); and corridor planning and conservation and mainstreaming biodiversity conservation into forest and rangeland management.
- The Ukraine Azov Black Sea Corridor Biodiversity Project (\$6.9 million) is incorporating management measures for high conservation value lands in the Black Sea coastal zone, through landscape level corridor plans, coastal land use plans, and farm land titling plans.
- The Moldova Lower Dniester River Biodiversity Conservation Project (\$1 million MSP) is working to develop a transboundary protected area plan for high conservation value wetlands of the Lower Dniester River in Ukraine and Moldova.

In order to embrace the necessity of cross-sectoral planning in each of the four projects, the participants were selected for their backgrounds in finance, government, protected area planning, forestry, game management, business, and pollution prevention (see Appendix 1). Participants included minister and deputy minister level officials and technical specialists from the ministries of environment, finance, and urbanization & planning, state land departments and regional government, protected area managers, and project managers. All participants—administrators, decision makers, project managers—were united in their need to understand and support project planning in their region.

The Program

The participants met with over 30 people and organizations from government, business, and non-profit organizations connected with science, economic, and policy developments at Lake Tahoe or nearby regions (see schedule in Appendix 2). The tour consisted of a mix of site visits and meetings, including visits with: research labs at U.C. Davis; businesses such as ChevronTexaco and local ski resorts; interpretive trails managed by the U.S. Forest Service (USFS), National Park Service, and local eco-tour agencies and operators; regional planners at Tahoe Regional Planning Agency (TRPA), USFS, and the California State Resources Agency; policy-makers at federal, state, and local agencies; and non-profit agencies such as the Sierra Club. Figure 3 below shows the 2002 Study participants with the California Secretary of Resources Mary Nichols.

The Lake Tahoe portion of the study tour concluded with a 2-day system dynamics workshop led by Stephen Berwick (World Bank consultant), John Tracy (Desert Research Institute), and Andrew Ford (Washington State University). The workshop was developed to assist participants in understanding and considering the numerous variables that influence each other and the long-term planning and may thwart the achievement of measurable results. Workshop leaders explained the specific tool (the STELLA model), developed an example model of the Tahoe basin, and presented potential uses of the model for planning in areas similar to those in Eastern Europe and Central Asia. The Aral Sea provided one such example. The modeling workshop was a useful exercise for participants to acquaint themselves with software that allows planners to estimate and to test the costs and benefits to the environment and to the economy of various management policies. Such a program is likely to be a valuable tool for planners in any type of ecosystem.

| Main Study Tour Messages and Lessons Learned

The study tour was designed to deliver key messages surrounding three focal areas: Policy Development, Economics and Business, and Science. These messages are:

1. **Regional plans need to be flexible in design and implementation so that they can be responsive to developments in scientific research and policy.**

Part of the success in regional planning initiatives at Lake Tahoe can be attributed to a scientific indicator—water clarity—that clearly illustrates the urgency for policy integration and increased financial commitment to regional planning around Lake Tahoe. For thirty-five years now, scientists at Lake Tahoe have monitored changes in water clarity. The simple and consistent decline in water clarity has allowed scientists to convince many stakeholders of the need for continued research, conservation, and careful planning to improve watershed health. Long-term, consistent, and easily-comprehended data collection and monitoring has enabled regional planners around Lake Tahoe to develop long-term plans that address the science-supported needs for a healthy and sustainable watershed, thereby illustrating the value of consistent long-term research.

Models indicate that it will take at least a generation to see any improvement in water clarity resulting from policy changes and new land-use practices. The time frame dictated by natural schedules differs from that of a politicians' tenure, requiring a long-term commitment to financial support for scientific research and to the development of policies that are responsive to that research.

Adaptive management must also apply to the selection of boundaries for planning efforts. Lake Tahoe's current watershed-based planning model has been useful for looking at the basin as a system and for linking cause and effect. New research, however, indicates that major sources of pollutants that contribute to the reduction in lake clarity are generated from motor vehicles and farming practices all over California and the Western United States. Inevitably, solutions to problems at Lake Tahoe will involve a larger region than originally anticipated.

2. **Widespread stakeholder support and involvement creates bottom-up and top-down support for regional planning initiatives, thereby increasing opportunities for financial support.**

Using information that is easily understood by the public and is oriented towards achieving specified results enhances the quality of dialogue and contributions among stakeholders. By clarifying stakeholders' interest in and dependency on a healthy and attractive environment the planning process at Lake Tahoe exposed the detrimental costs of disagreement. Informed planning dialogues and processes have opened the door to greater cooperation and collaboration of stakeholders as diverse as Tahoe's gambling industry and environmental advocacy organizations.

3. **It is possible for regional planners to coordinate economic development and resource conservation goals.**

Lake Tahoe's need to develop the local economy while simultaneously protecting its natural resources is based largely on the fact that tourism is the main industry in the basin. Regional planners should work to coordinate environmental goals with the lowest impact portfolio of economic

drivers available to them. Additionally, if the private sector is included in planning processes, they represent a potential source of funding for environmental improvement projects.

- 4. New tools are needed to support complex regional planning.** Participants learned that successful regional planning requires greater attention to a wider set of variables and interests. During the study tour, participants were introduced to a new innovative integrated planning model approach and software to highlight the relatively inexpensive, simplistic tools available to assist in their own planning efforts. Participants were also introduced to new stream restoration techniques, methods for research and monitoring of nutrient pollutants, remote sensing, and other applications.

Upon completion of the study-tour, participants were asked to identify lessons learned and their potential application to local project issues. The majority of participants found three areas most useful including: the systems modeling exercise concluding the study-tour; the TRPA model for multi-stakeholder involvement, their use of environmental thresholds for planning, and their underlying regulatory policies; and the involvement of Non-Governmental Organizations (NGO's) in policy development. Additional highlights included: discussions with business and finance interests working to make a profit while protecting natural resources; interpretive methods and tools used in Lake Tahoe; meetings with high-level policy-makers in California and Nevada to understand how they deal with growing populations and economic growth while trying to protect natural resources; and the inter-country learning amongst the 6 different countries.

Most participants were keen to learn more about how the TRPA management structure was developed, the laws it was responsible for enforcing, the tools it used for regional planning, and its map-making capabilities. Several countries such as Georgia, Ukraine, and the Kyrgyz Republic are developing protected area planning laws to which ideas from the TRPA's management of economic and conservation interests could be applied. Moldova's World Bank biodiversity project is currently working to establish the Lower Dneiper National Park and is developing a Memorandum of Understanding to work with Lake Tahoe-based regional planners to assist in these efforts.

Finally, participants were particularly interested in how NGO's assisted in planning efforts at Lake Tahoe. Participants met with several NGO's including Sierra Club, Ducks Unlimited, and the League to Save Lake Tahoe. The study-tour was led by the Tahoe-Baikal Institute (TBI), an NGO based in Lake Tahoe focusing on developing and spreading multi-disciplinary watershed protection management and tools through research, training, and exchanges. TBI has operated at both Lake Tahoe and Lake Baikal in Russia for the past ten years. With such international focus and experience, TBI was well-equipped to provide a bridge from watershed management at Lake Tahoe to the various environmental interests of the former Soviet Republic representatives.

The participants ranked the most valuable benefits of the tour to their countries and projects, and the results are summarized in the table below. The results illustrate the need for less subjective, more integrative planning tools such as a model which was less about the software than about the systems thinking process as a way of making planning for complex systems more understandable. The survey generally reflects the demonstration of the values of planning inclusivity, particularly of the public and NGO's. Finally, the results illustrate the appreciation of a dedicated and authoritative regional planning body like the Tahoe Regional Planning Agency. TRPA's power was seen to flow from the objective analysis of hard data, and the participation of many concerned citizens.

Lake Tahoe as a Regional Planning Case-Study

Lake Tahoe is the world's 10th deepest lake at 502 meters with a surface area of over 495 square kilometers (km²). The watershed area is 966 km² and contains over 1,420 plant species and 312 vertebrates. Lake Tahoe is renowned for its crystal blue waters, described by famous American icon Mark Twain as "the fairest site the world could see". Figure 1 is a map of the Lake Tahoe watershed.

Over the last 40 years, Lake Tahoe policy-makers have developed pioneering approaches to protect the lake's unique qualities while sustaining a \$1 billion a year economy generated from over 2.5 million tourist visits each year. Land use in the basin is decided upon, managed, and regulated by the multiple stakeholders using scientific and economic indicators and analysis as a guide. Current success in coordination began only recently, in 1982, when the federal government established a federal basin-wide planning agency to coordinate among the 2 states (California and Nevada), 5 counties, 3 state parks, 2 cities, and multiple business and non-profit agencies in an area where 56% of lakefront property is in private ownership and 87% of the entire basin is in public ownership. The multi-faceted environmental, social, and economic management components at Tahoe provides a useful case-study for how an area can protect a valuable natural resource while allowing for current and future economic and urban development.

Figure 1: The Lake Tahoe Watershed

Lake clarity has been the unifying watershed health indicator for Lake Tahoe due largely to research and monitoring efforts conducted at the University of California, Davis (UC Davis). Since 1968, Dr. Charles Goldman and his UC Davis "Tahoe Research Group" have monitored the clarity and quality of Lake Tahoe. Figure 2 shows the results of their long-term monitoring of water clarity using the sechi disk technique that shows a decline in clarity at an average rate of .3 meters per year.

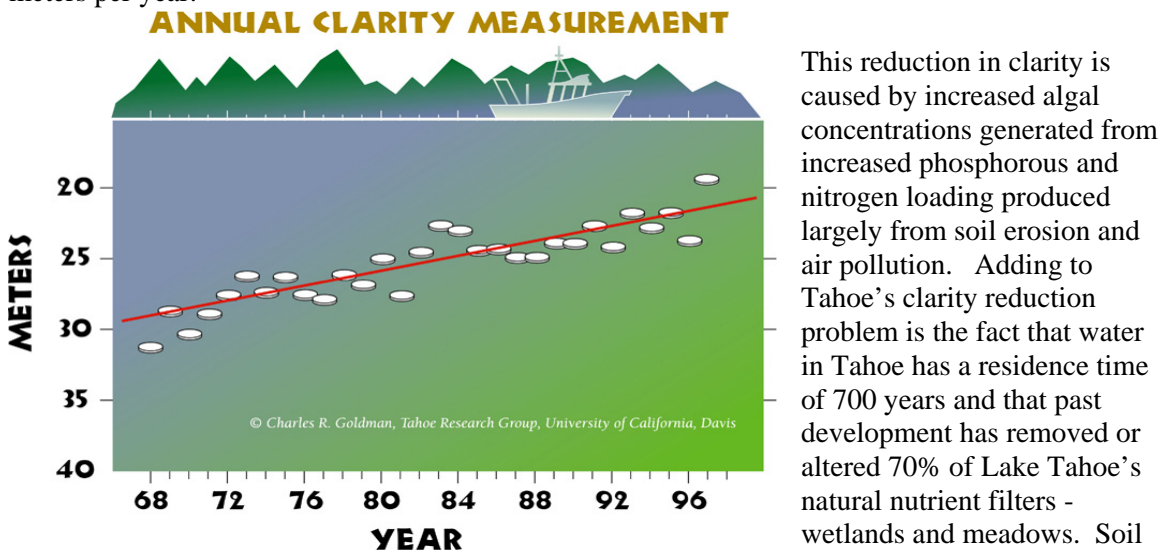


Figure 2: Lake Tahoe's Driving Environmental Indicator: Water Clarity

The structure of Lake Tahoe's economy has shifted significantly over the last century from silver mining and timber harvesting in the early part of last century, to today's tourism-based economy. Since 1950, Lake Tahoe's population has increased from 4,500 to today's 55,000 full-time residents with most residents working at the hotels, restaurants, ski resorts, casinos, government

agencies and other service-sector industries located in the basin. Over half of Tahoe's current revenue is generated from the gaming sector alone.

Tahoe receives over 2.5 million visitors a year. Most tourists take advantage of Tahoe's rich biking, hiking, boating, and other world-class outdoor activities. This high tourist visitation rate in Tahoe's relatively small watershed has put increased pressure on agencies such as the U.S. Forest Service to preserve Tahoe's wilderness areas while providing access.

The current federal regulating body in the Lake Tahoe basin is the Tahoe Regional Planning Agency (TRPA). TRPA is responsible for regulating land-use decisions in the basin guided by maintaining 9 science-based thresholds developed in 1982 to ensure agency decisions would be linked to the health of the Tahoe watershed. These 9 indicators include: water clarity, water quality, air resources, vegetation, wildlife, economic health, tourism, scenic values, and soil quality. TRPA is governed by a 14-member Board of Directors which includes 6 members from each state (California & Nevada), a federally appointed representative, and a "public member" which meets once a month to develop policy and make decisions.

World Bank Lake Tahoe Study Tour Participant List

Central Asia Transboundary Biodiversity Project

Republic of Kazakhstan

Bakyt Arystanov – Project Manager
Aitbek Menlibekov – Director of the Aksu Djabagly State Natural Reserve
Myrzabek Akhmetov – National Director of the Project
Islam Abishev – Deputy Akim of South Kazakhstan Administration
Laura Ayapbergenova - Translator

Kyrgyz Republic

Turatbek Musuraliev – Chairman, State Forestry Service of the KR/ Project National Director
Dolotbek Berikbaev–Deputy Director, State Agency for Registration of Rights to Immovable Property under the Government of the KR
Urmatbek Mambetaliev – National Manager, KyrgyzPIU
Irina Sarchenko - Translator
Kanatbek Moldokulov – Regional Manager, Regional PIU

Republic of Uzbekistan

Bory Alikhanov - First Deputy Chairman, the State Comm. for Nature Protection
Askhad Khabibullaev - National Manager, UzPIU
Abdulkarim Abdujamilov - Director, Ugam-Chatkal National Park
Andrey Egorkin - Secretary/Translator, UzPIU
Vyacheslav Zinin - Deputy Finance Minister

Moldova Biodiversity Conservation in the Lower Dniester River Project

Piotr Gorbunenko, Director, BIOTICA Ecological Society

Ukraine Azov Black Sea Corridor Biodiversity Project

Mr. Mykhaylo Borysyuk, Chief of the Ukrainian Parliament Comm. on Env. Policy, Nature Use and Elimination of Chernobyl Disaster Consequences;
Mr. Oleg Nikolenko, Major of Primorsky Rayon of Zaporizhzhie

Georgia Protected Areas Development Project

Paata Shanshiashvili, Project Director
Besarion Lobjanidze, Deputy Chairman of Protected Areas State Department
George Mirianashvili, Chairman of the department of regional planning and urban development within the Ministry of Urbanization.

World Bank

Stephen Berwick, consultant

Tahoe-Baikal Institute

Tony Brunello, TBI Executive Director
Rachel Sigman, TBI Special Programs Director
Eitan Trabin, TBI Program Coordinator

Study-Tour Schedule

Monday, September 30	
9:00	<p>Introductions: Tony Brunello, Executive Director of Tahoe-Baikal Institute</p> <p>Intro to U.S. Government and Natural Resource Management: John Gussman, Staff Counsel California Tahoe Conservancy</p> <p>Federal Regulatory and Protection Agencies: Steve Berwick, Consultant for the World Bank</p>
13:00	Introduction to Tahoe Resource Management agencies and “Lessons Learned.” Tony Brunello
15:00	Michele Perrault, International Vice President & Former Club President, Sierra Club
Tuesday, October 1st Sacramento, Lake Tahoe	
CALIFORNIA POLICY-MAKERS	
9:30	“Past and Current Science and Policy Development at Lake Tahoe.” John Reuter, UC Davis Tahoe Research Group.
10:3	Ron Brean, Chief of Northern Division, California State Parks & Recreation (Room 1412)
13:30	General Jeffords and Colonel Jacks, Governors Committee for Base Realignment and National Guard
14:30	Bill Stuart, California Department of Forestry and Fire (Resources Agency Room # 1411)
16:00	Mary Nichols, Secretary of Resources Finance Meeting with Annette Perini
19:30	Dinner
Wednesday, October 2 Lake Tahoe	
SCIENCE	
10:00	Demonstration on Tahoe Research Group’s Vessel, <i>John LeConte</i> . Bob Richards, Tahoe Research Group,
12:00	Lunch in Tahoe City
13:30	<p>Panel on Water Quality Issues</p> <ul style="list-style-type: none"> ➤ Dave Roberts, Lahontan Regional Water Quality Control Board ➤ Bruce Warden, Lahontan Regional Water Quality Control Board ➤ Rick Hydrick, South Tahoe Public Utilities District
15:30	Visit to Taylor Creek Visitor Center with Gay IteI, U.S. Forest Service Lake Tahoe Basin Management Unit
Thursday, October 3	
ECONOMICS AAND BUSINESS ISSUES	
8:00	Dan Sindeck, Executive Officer of the Board of Forestry and Fire Protection
10:30	Overview of the U.S. Forest Service—Steve Berwick
10:30	Economic Overview of the Tahoe Basin—Tony Brunello
11:30 – 12:30	Lunch in Stateline Area
12:30 – 13:30	Duane Wallace – Chamber of Commerce
13:30 – 15:30	<p>Panel: The service sector economy in the Tahoe Basin</p> <ul style="list-style-type: none"> ➤ Steve Teshera, Tahoe-Gaming Alliance

	➤ Andrew Strain, Heavenly Ski Resort
15:30	Site-Visit Cold Creek Restoration Site with Steve Goldman, California Tahoe Conservancy
Friday, October 4	POLICY
9:00	History of regional planning & TRPA Compact, TMDL policies, scenic thresholds. ➤ Carl Hasty, Deputy Director, TRPA ➤ Kevin Hill, Environmental Planner, TRPA
9:45	Special visit from TRPA Governing Board Chair Dean Heller, Secretary of State, State of Nevada
10:30	Panel: Discussion of Lake Tahoe's Environmental Improvement Program from Federal, Local, and State Agencies ➤ Ed Gee, Deputy Forest Supervisor, US Forest Service ➤ Dennis Machida, Executive Director, California Tahoe Conservancy ➤ Lisa O'Daly, City Planner, City of South Lake Tahoe
12:00	Lunch
2:30	Glenn Miller, University of Nevada, Reno "Mining issues: Development to Closure"
4:00	Site Visits – The Tahoe Rim Trail Interpretive Center led by Sarah Holms
Monday, October 7	Regional Planning Workshop
10:00-17:00	Workshop led by John Tracy (Desert Research Institute and University of Nevada, Reno) and Steve Berwick (Consultant) and Andrew Ford (Washington State University)
12:30	Rochelle Nason, Executive Director, NGO-League to Save Lake Tahoe
Tuesday, October 8 Incline Village, CA	<i>Tahoe—Regional Planning Workshop II</i>
12:30	Nanci Glogaur, Executive Director, NGO-Parasol Foundation
6:00 – 8:00 PM	Public farewell reception and discussion of World Bank biodiversity projects: Wine and Cheese with Parasol Foundation Board and Collaborators
Wednesday, October 9th Sacramento and San Francisco	
10:00 AM	Fritz Reid, Ducks Unlimited
12:30 PM	Lunch hosted by ChevronTexaco
2:00-4:00 PM	ChevronTexaco Overseas Petroleum: Regional planning, GIS mapping, and biodiversity protection in the Aral Sea ➤ Michael Slovacek, Manager, Health, Safety & Environment ➤ Pat O'Brian, Environmental Manager ➤ Lucinda Brown, Environmental Planner
Thursday, October 10th Washington, DC	Leave San Francisco to Washington DC
Friday, October 11th	Visit to Shenandoah National Park
Saturday, October 12th	Final Review of Study Tour at World Bank headquarters