

**UPPER TRUCKEE RIVER RESTORATION STRATEGY**  
**BLUE RIBBON EXPERT PANEL KEY FINDINGS & RECOMMENDATIONS**  
**PRESENTED AT THE UTR WORKSHOP 3 MAY 2013 (SOUTH LAKE TAHOE, CA)**

**I. Philosophy and guiding principles**

**Key findings:**

- There are fewer obstacles to success in large-scale stream restoration in this basin than many other places we are aware of.
- We commend the science-based approach to designing projects and commitment to understanding physical processes is very important. However, these are not goals. They are tools for achieving certain goals.
- There is nothing inherently wrong with geomorphic process-based restoration BUT the UTR Restoration Strategy lacks a vision and associated goals. And without a vision, all projects are considered priorities and therefore nothing is a priority.
- The UTR Strategy appears to be geared toward making the watershed healthier, but an operational definition of health is missing.
- We don't see enough evidence of collaboration and cooperation among entities as required to achieve the stated goals of resiliency.
- The definition of restoration "restoring to pre disturbance or historic conditions" may not be achievable, especially due to anticipated hydrologic regime changes due to climate change.
- What is done here in UTR could/should become the hallmark for management in the entire basin, state and nation. This document/Strategy should not be viewed simply as means to achieve specific projects in lower 9 miles, but as a general model for watershed restoration throughout the basin.
- There is a need for more leadership to align funding opportunities, resolve scientific conflicts, and implement staff recommendations in a consistent way across agencies.

**Recommendations:**

- Develop an overarching, shared vision for a healthy Upper Truckee River watershed.

- Translate the vision into quantifiable goals (ecological/biological, ecosystem services, geomorphic processes etc.)
- Develop and implement a process to prioritize goals at the reach and watershed scales.
- Consider the full range of future conditions (climate, political, funding, economic etc.) of the watershed that could be used to set and meet goals, and full range of suitable restoration approaches.
- Identify executive leadership to develop planning, permitting, assessment, reporting, funding at the watershed scale.

## **II. Monitoring.**

### **Key Findings**

- With the exception of geomorphic form, the relationship between the goals and objectives and monitoring is unclear.
- Monitoring currently includes geomorphic form (cross sections, long profiles) not geomorphic processes (sediment transport, shear stress).
- The current monitoring framework does not reveal the effect of one project on another or combined effectiveness of the projects at the watershed scale.
- Monitoring is not designed to distinguish between project impacts and other activities or events that may have impacts (e.g. fire impacts, climate change etc.)
- A lot of data has been collected, but there does not appear to be an established process for multi-agency analyses, interpretation and results.
- No method for public or interagency access to data was presented.
- There was inadequate reference to or utilization of existing methods of data management and sharing tools.
- There is a perception that monitoring funding is limited to only permitted projects implementation (and not for long-term evaluation).
- It is commendable that adaptive management principles are considered; however, the adaptive management practices have not been hypothesis-driven.

- UTRWAG is a very positive step towards needed collaboration and coordination and it should be empowered to do more.

## **Recommendations**

- Monitoring for projects should be connected to quantifiable objectives (e.g., the same monitoring approach does not have to be applied to all projects)
- Established monitoring baselines are needed for all projects
- Establish a program of ongoing measurement of such variables of flow, in situ measurements of dissolved oxygen and turbidity, and water temperature with adequate array of sensors to establish baseline conditions, shifts in baseline and the effects of projects on baseline. This ambient monitoring program at watershed scale can be used to track progress toward goals, detect change caused by external drivers (policy, climate change, funding, etc.) and that allow assessment of effects of projects on ambient conditions.
- Project monitoring should include a threshold and trigger mechanism to monitor beyond permit requirements.
- Develop decision processes to determine how monitoring can be distributed among projects such that not all monitoring has to happen at all projects all the time.
- Use UTRWAG to create conceptual models of watershed form and function to inform monitoring goals and methods and consider using predictive modeling approaches.
- Use modeling as component of hypothesis-driven adaptive management.
- Develop a research component for the monitoring program to develop and test monitoring methods to understand causal relationships between factors being measured – includes modeling effort to predict relationships, fill data gaps, and examine possible future conditions.
- For each of the goals (per above in Philosophy section) identify key processes that must be monitored to assess progress, and determine which processes must be measured directly and which can be inferred from changing conditions.
- Be efficient with monitoring funding, but do not let anticipated lack of funding deter monitoring. Consider using academic and research institutions, NGOs to assist with research and monitoring.

- Prioritize ongoing monitoring, data sharing, and data analysis. In addition to monitoring projects, have sites that are monitored for the foreseeable future so that changes due to projects are captured as well as impacts of hydrologic events and other activities in the watershed. This will require ongoing funding.
- Create a single repository for all data/reports produced from/for the UTR. This means one entity needs to step forward and be the lead. There should be a dedicated web page where the strategy, progress reports, monitoring reports, meeting minutes, etc. are posted. Having these stored on each agencies web site is not helpful to the public.
- Use an existing organization such as the Tahoe Science Consortium to coordinate monitoring at the watershed scale and to support independent, objective, interagency analysis and interpretation of monitoring results. Consider having an independent science entity develop a coordinated monitoring plan to measure progress toward specific goals over long-term. The San Francisco Estuary Institute (SFEI) could serve as a model.

### **III. Communication**

#### **Key Findings**

- The UTR Strategy lacks a communication strategy.
- The agencies approaches toward the public may need to be adjusted to avoid inadvertently alienating the public.
- The methods of communication among agencies, the policy makers, and the affected public outside of regulatory processes could be improved.
- The UTR agencies are not taking full advantage of existing opportunities to outreach.
- There is a need to evaluate effectiveness of existing communications efforts.
- UTRWAG is positive model for interagency coordination and communication and should be built upon.

#### **Recommendations**

- Include the public in the UTR Restoration Visioning process.
- Develop an effective communication strategy that focuses on agreed upon set of messages about the UTR vision and actions to achieve that vision.

- Explore opportunities to collaborate creatively to leverage limited funding, such as pooling funds, incorporating citizen science, local volunteerism, interpretive signs, kiosks, connections with local schools, academic research institutions and NGOs.
- Evaluate the effectiveness of existing communications efforts (opinion polls, focus groups).
- Add signs and information kiosks to inform public about restoration projects before, during and after projects.
- Help develop and utilize capacity of local, state and national NGOs as communication partners.
- Evaluate tone and message of current signage. Consider translating into different languages as appropriate (e.g Spanish).
- Engage local businesses to participate in communicating UTR restoration.
- Enhance UTRWAG to improve interactions with public, stakeholders (e.g. websites, list-serves, social media, newsletter, press releases).
- Cultivate support from large donors.
- Foster the public's perception of openness on the part of agencies.
- Identify main audiences and for each one develop appropriate communications strategy.
- In 2 years produce project status report for public consumption and agency use that provides overview of status/health of Upper Truckee watershed.

#### **IV. Ecosystem Services**

##### **Key findings**

- Ecosystem services are mentioned but their role in the Strategy is underdeveloped. A variety of services are identified in UTR strategy but their relationship to the strategy is unclear.
- Ecosystem services are going to be increasingly important in stream restoration efforts because they relate restoration to people. This highlights their importance in inclusion in the communications strategy.
- The agencies are understaffed to properly incorporate ecosystem services into the strategies.

**Recommendations:**

- Develop in-house expertise to address ecosystem services from both ecological and economic perspectives.
- Encourage continued efforts to better develop the relationship between the strategy and ecosystems services. Make more explicit the relationship between ecosystem services and restoration goals.