Carpe Diem West – Healthy Headwaters Program
Leadership Convening – Sacramento, CA
May 16, 2013

Meeting Summary

Building the Policy Scaffolding for Healthy Headwaters

Central Themes and Key Take-Aways

- Strong consensus around the need for road mapping of different types (programs, initiatives on the ground, funding) and at various scales (federal, state, regional, micro-local).
- Need for alignment of institutions and mandates around watershed and headwaters priorities
- Innovation is really coming from bottom up rather than top down
- Best role for the federal and possibly state agencies may be to provide various types of support; technical assistance, data and other information, and (when available) funding.
- Need to foster the public’s understanding about where their water comes from – the role of the “hydro-commons” in daily lives and its value for them going forward
- Need to demonstrate tangible benefits of public (or private) investments in watershed restoration; failure to do this to date has been a significant problem
- Power of stories and maps can be significant in moving a healthy watershed agenda forward
- Healthy relationships and healthy communities are directly linked to healthy headwaters efforts on the ground
- There is a critical story to tell about the economic value in headwaters investment around avoided costs, that has not yet reached a tipping point
- Further convenings that could be useful:
  - Role of headwaters communities
  - Making the case for investing in headwaters from public and private perspectives
  - Focusing on the intellectual capital needed to support healthy headwaters investments
  - Working to develop the “model of record”
Mark Nechodom, Director, California Department of Conservation:

**Summary Points**

- The concept of protecting headwaters makes people sparkle; the notion that investing in upper watershed protection makes sound economic sense is catching on. However, a major challenge is that US has spent upwards of $6 billion/yr. since the 1980s on conservation -- “good things”; CA has spent $20 billion (at a payback cost of > $40 billion). But we cannot point to specific results or describe “what we’ve gotten” from this investment.
- The idea that if we spend on conservation, “truth and beauty” will prevail is no longer a sustainable paradigm. Performance-based metrics and accountability are essential going forward.
- Quantification of ecosystem services as the performance metric is key. Ideally, accomplish this with sufficient integrity that it draws private capital and investment.
- Verification that there is a “there there” will be challenging.

**Key Discussion Points**

- Re financing – the Denver model where USFS and city split the cost 50/50 is not sustainable; similar resources will not be available at the federal level going forward.
- Markets are intriguing, but caution is advised when looking for private investment in public resources. If private investors hold carbon credits on public lands, doesn’t this give rise to the notion that those investors may have a reasonable claim to guide management of those resources?
- Investors need to be able to show value for their investment – but it is important to distinguish between “charismatic tons” and real tons of sequestered carbon (or other ecosystem service).
- A major challenge to managing headwaters/watersheds comprehensively is the highly fragmented nature of our institutions. Alignment of policies, regulations, incentives are lacking.
- We talk about “collaboration” but we mean “cooperation” -- difference is that no one is setting aside their particular priorities. Operating in “collaboration” would mean more alignment.
- Right now many people view green infrastructure as a big “I’m sorry” fund; but it’s a mistake to see green and gray infrastructure at odds, both are needed.
- Healthy relationships are key to making healthy headwaters real; need to invest in community capacity. People are the delivery mechanism for spending in the best ways.
- Failure to do meaningful reporting on how we have spent bond $ at the state level is CA
is a problem for spending in the future. Few agencies can list all of their grants and what
the public got for them.

- Where communities have successfully preserved their green infrastructure (like Salt Lake
City), memories can fade about these benefits in the face of development pressure.
- Moreover, in a time of economic crisis, conservation is not a political priority. Governor
Brown, President Obama do not raise these issues in light of higher public policy
priorities. So preserving ecosystem services is about making a case to the public why
they should care about these projects.

California Water Agencies and Healthy Headwaters
Cindy Tuck, Association of California Water Agencies
David Guy, Northern California Water Association

- ACWA has issued principles recognizing that headwaters as contribute to a reliable
source of water. Coordination and integration are key in working with the water
agencies. Education is essential -- people do not understand the concept of headwaters
or watersheds. It is a problem for water agencies that people are disconnected from
their watersheds.
- ACWA’s headwaters policy starts from the premise that headwaters contribute critically
to reliable water supplies. The principles cover 4 categories:
  1. Improved planning
  2. Fire management
  3. Research
  4. Finance
- Sacramento Valley as the “environmental success story of our generation” in light of the
balance of economically sustainable small towns, forests, meadows, watersheds, and
water supply in balance with demand.
- 65% of CA’s water starts in the Sacramento watershed; cities that rely on this supply
can/should play a larger role in resolving water scarcity issues.
- California’s 2009 legislative package contained a few relevant concepts:
  - Preservation of water rights and area of origin protections
  - Co-equal goals of more reliable water supply for CA including its headwaters, and
    environmental health
  - Promotion of regional sustainability
- Interbasin transfers complicate this entire discussion; e.g., when water goes to LA from
the Klamath River through trading. So remote entities have large interests in what
happens in localities far away. Often those who live in watersheds get it, but end users
do not.
• While there can be a debate about whether the public “cares” more about water quality or quantity, they are intertwined.
• Groundwater originates from headwaters as well, and we are mistaken to consider those as separate and apart.

The View from the Ground: Two Utilities

Jeff Beehler, Santa Ana Watershed Project Authority
Richard Sykes, East Bay MUD

• SAWPA is one of the most urban watersheds in the US, but 90% of its precipitation falls on land owned and managed by USFS. Sedimentation as a result of fire is a major risk.
• Big effort over 20 years for agencies to work together, but it is complex. They collect data differently and have different mandates and accountability schemes. Today an MOU is in place covering several areas of work; thinning, road retrofitting, meadow restoration, chaparral restoration. Projects provide a range of benefits – water supply, avoided costs, etc.
• EBMUD differently situated, the question is whether the avoided costs of restoration justify the investment. Now working with groups in the Upper Mokelumne River Watershed Authority. Large investment to assess risks to the watershed (fire, development, septic systems).
• Even where benefits are indirect, the threat of fire is “motivating;” the question is what do water agencies do in the absence of fire to prevent its occurrence.
• Managing EBMUD’s watershed is mainly about protecting water quality; reliability of supply is tied to quality of fisheries

The View from Academia: Water Implications of Forest Management Strategies

Roger Bales, UC Merced, Mountain Hydrology Research Group

• UC is bringing new technology and measurements to bear to track fluxes including; evaporation, precipitation, snow melt, runoff, etc. and how the forest landscape is likely to impact water supply. (Myth that we can estimate or predict these fluxes.)
• In considering forest management and water, 3 issues stand out:
  - Water used by vegetation
  - Interception losses
  - Timing of snowmelt and runoff
• Conducted a meta-analysis of impacts of vegetation on the whole range of terrain. Available data suggest that tall trees reduce snowmelt; clear cuts promote snowmelt.
Reducing forest cover by 40% (of max levels) across a watershed could increase water yields by 9%, but this number could rise. Evapotranspiration more impacted by canopy than ground temperature.

- 3 “I’s” of water security:
  - Infrastructure
  - Institutions
  - Information
- Modeling can be useful but provides information that is significantly less reliable than measurement of actual phenomena.
- Managing forest ecosystem services is essential for water supply security in the face of climate change. The research community is a critical partner in this effort.

**Federal Policy Scaffolding Discussion Strategies**

*Moderated by Cynthia Koehler, Carpe Diem West*

- Various federal agencies have many funding mechanisms to support healthy headwaters programs, but local water managers need a roadmap to help navigate the available options to find the most appropriate and effective ones.
- It may be productive to think about the roadmap on 2 levels: larger scale programs that touch every state; and programs that touch projects at the community level.
- State-delegated authorities, such as the EPA revolving funds, are probably the most highly leveraged. At the same time, federal agencies no longer want to be viewed as “regulators” but as partners.
- We currently lack commonly agreed upon “models of record;” this problem has led to failures in a large number of programs nationwide.
- It could be useful to find the nexus (or nexuses) between the parts and pieces of our most prominent federal programs, specifically how to share data at federal, state, and local levels.
- Strong consensus that impetus needs to come from ground up, and that top down policy can be an impediment. At the same time, the federal and state levels can be vital in providing assistance to on the ground efforts in the form of data, tools, guidance, technical assistance, capacity building, etc.
- California’s Integrated Water Management Program is trying (with varying degrees of success) to organize and clarify the many different programs. Could there be a "master plan" that would be accessible to local or regional groups that need tools, information, and funding for their projects. There is an effort to develop a web-based source of information that would let those seeking funding find all of the potential sources available as well as the restrictions and so on.
• Related to this, a simplified and efficient system for electronic monitoring and data reporting would be extremely helpful.
• Many programs that touch on healthy headwaters are not primarily funding mechanisms; a major issue is the different substantive programmatic elements and priorities established by these programs are not aligned.

Building the Economic Case Discussion

*Moderated by Karl Morgenstern, Eugene Water & Electric Board*

• Tough issue for utilities is determining how investments in green infrastructure compares with other types of capital investments.
• Need an apples to apples way of comparing treatment and regulatory costs with restoration costs.
• CERES is exploring how watershed investment can reduce utilities’ bond risk (or conversely how risks to watersheds could increase bond risk). A framework for bond raters to give better bond ratings to utilities making healthy headwaters investments could be an incentive (or, as noted above, work to the contrary)
• Capturing the value of a functioning watershed today is challenging in light of current accounting rules.
• There is significant avoided cost potential including; reduced treatment expenses, service interruptions, reduced fees related to regulations, reduced restoration costs, reduced costs related to disasters, risk management (climate change) and reduced accounting costs.
• There are also various classes of affirmative benefits generally not captured in standard cost benefit accounting, including; public health, ecosystem sustainability, enhanced water yield, recreation, tourism, fisheries
• All of this must be captured in a meaningful way, because utilities want real numbers if they are going to forgo grey infrastructure. Questions about how to accelerate that effort, identify the best messengers.
• We are starting to see a real change in attitude in the water industry, some of the industry groups such as AWWA are beginning to focus on watershed benefits.

The Healthy Headwaters/Carbon Connection Discussion

*Moderated by Kim Carr, Sierra Nevada Conservancy*

• CA is setting up an investment fund for efforts to reduce carbon; likely that similar efforts will evolve at national and state levels. The question is whether and to what extent is there a nexus to healthy headwaters work, or put differently, are these funds reasonably
likely sources of financial support for healthy headwaters efforts?

- Worth noting that of all the categories of investment listed in CA’s recent investment plan, the forestry sector is the only one recognized as a carbon sink.
- However, it is not yet clear that preservation of headwaters forests has significant carbon benefits from a scientific or political perspective. Headwaters protection is likely to lose the “quantification” race; i.e., conservation is unlikely to provide more than a sliver of carbon reduction benefits compared with investments in the electric or transportation sectors.
- An alternate view is that accounting for the carbon value of the a community’s/utility’s watershed preserved in perpetuity is critical, from both a water and carbon perspective there is enormous value that is routinely left out of the accounting calculus in ways that lead to poor and inaccurate cost-benefit analysis.
- The argument for conservation is the connection not only to water security but a raft of community benefits including sustainable energy, open space, other values.
- Would be useful to create a “model of record” to put parties on the same page about how to do quantification, and to have a consistent methodology for telling the story.
- Perhaps the more critical connection between healthy headwaters and carbon is through the electricity use involved in the movement of water (the largest user of electricity in CA). In other words, what is the healthy headwaters role in peak electricity?
- There is a role, as yet not clearly defined, to bring in the private business sector into watershed investment networks to protect headwaters landscapes. Benefits are a bit ephemeral and hard to quantify to date.
- USFS may becoming more interested in helping to develop a market for the byproducts of healthy headwaters restoration efforts on public lands; the biomass taken down to reduce hazardous fuels.